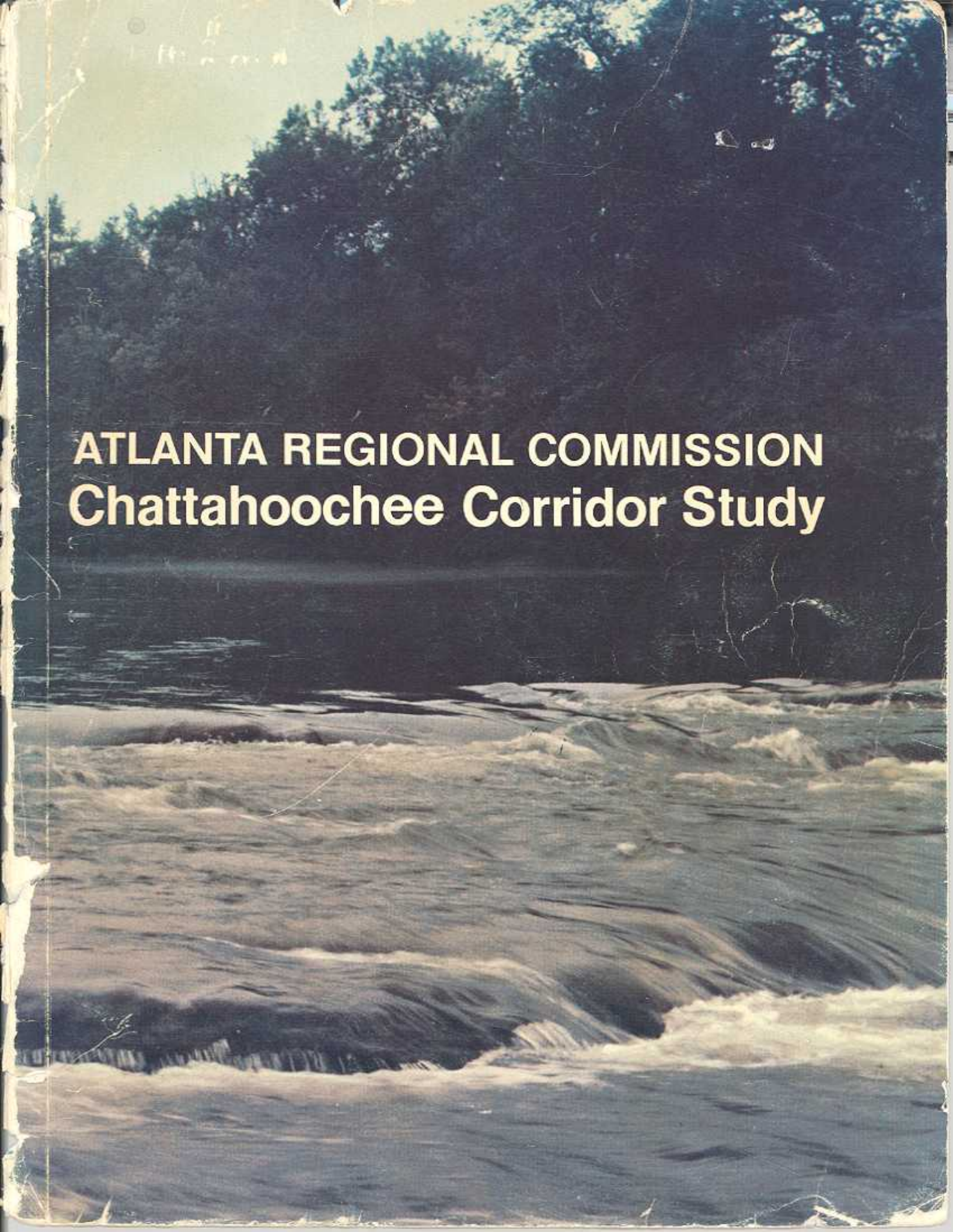

ATLANTA REGIONAL COMMISSION
Chattahoochee Corridor Study

TITLE:	CHATTAHOOCHEE CORRIDOR STUDY
AUTHOR:	Atlanta Regional Commission
SUBJECT:	A Land Use Plan for the Chattahoochee River Corridor from Buford Dam to Peachtree Creek.
DATE:	July 1972
LOCAL PLANNING AGENCY:	Atlanta Regional Commission
SOURCE OF COPIES:	Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151 Atlanta Regional Commission 100 Peachtree Street, N.W. Atlanta, Georgia 30303
For reference:	HUD Regional Office Library Region III, Atlanta, Georgia HUD Library, Washington, D. C. State Depository Library, Georgia Institute of Techoology, Atlanta, Georgia Planning School libraries, Depository libraries
HUD PROJECT NO:	CPA — GA — 04 — 04 — 1000
SERIES NO:	n.a.
NO. OF PAGES:	80
ABSTRACT:	The publication is divided into six major parts including: a description of the Chattahoochee River's significance to metropolitan Atlanta; an analysis of existing manmade influences; a listing of basic assumptions and goals adopted by the Atlanta Regional Commission; an analysis of the significant natural features relating to development of the River Corridor; and proposals for implementing the plan by way of public acquisition of parklands and open space and adoption of new laws to regulate private development. The study was conducted to answer specific, pressing questions and emphasis is placed on proposals that can be implemented within the existing legal framework.

AMENDED RESOLUTION AMENDING THE CHATTAHOOCHEE CORRIDOR STUDY

WHEREAS, on July 6,1972, the Atlanta Regional Commission adopted the CHATTAHOOCHEE CORRIDOR STUDY together with two sets of twenty-three (23) maps each, respectively entitled "Land Vulnerability" and "Land Use Plan" as a Development Guide for the Chattahoochee Corridor as provided for in Section 13 of Georgia Laws 1971, Act No. 5; and

WHEREAS, on May 23, 1973, the Commission adopted the same as the Plan for the Chattahoochee Corridor as required by Section 4 of the Metropolitan River Protection Act (Georgia Laws, 1973, Act No. 66) as amended; and

WHEREAS, Section 13 of Georgia Laws 1971, Act No. 5, and Section 4 of Georgia Laws 1973, Act No. 66 respectively, authorize the Commission to revise the Development Guide and Plan from time to time; and

WHEREAS, as required by Section 4 of Georgia Laws 1973, Act No. 66, on August 19, 21, and 26, 1975, public hearings on the following proposed amendments to the Plan were held in Cobb, Gwinnett and Fulton counties respectively; and

WHEREAS, page 44 of the CHATTAHOOCHEE CORRIDOR STUDY includes the statement, "There are no new points proposed for River crossings at this time. Additional crossings should be minimized and constructed only if they are included in the Regional Transportation Plan. Replacement of existing crossings should occur only within the regional framework."; and

WHEREAS, the Regional Development Plan long range policy plan adopted by the Commission on September 24, 1975, calls for additional river crossing(s) for a transit facility in the Northwest quadrant; and

WHEREAS, estimates by the U.S. Army Corps of Engineers as to the probable elevation of the 50-year, 100-year and Standard Project floods have been revised for the Chattahoochee River since the CHATTAHOOCHEE CORRIDOR STUDY was prepared in 1972, thus providing flood-level estimates based on more detailed surveys;

NOW THEREFORE BE IT RESOLVED by the Atlanta Regional Commission that said Development Guide and Plan is hereby amended to include possible crossing(s) of the Corridor by extension of the Proctor Creek branch and the northwest line of the referendum MARTA system at or near the downstream boundary of the Chattahoochee Corridor at Peachtree Creek, provided that in the design and implementation of such new crossing(s) CHATTAHOOCHEE CORRIDOR STUDY guidelines are followed on land within the Corridor and appropriate measures are taken to protect water quality;

BE IT FURTHER RESOLVED that said Development Guide and Plan flood plain delineation for the Chattahoochee River is amended to be the elevations shown in the high water profiles in the U.S. Army Corps of Engineers Flood Plain Information Report titled "Chattahoochee River, Buford Dam to Whitesburg, Georgia" (November, 1973) so that the land designated as Chattahoochee River flood plain for purposes of said Development Guide and Plan shall be that land below the elevations shown in said high water profiles when said report was published; provided, however, that nothing herein shall prevent local governing authorities from adopting a more stringent definition of the flood plain;

BE IT FURTHER RESOLVED that in order to clarify and simplify the analysis of proposed developments in comparison with land vulnerability guidelines, said Development Guide and Plan is amended to change page 58 of the CHATTAHOOCHEE CORRIDOR STUDY by (a) striking the phrase "% Maximum Effective Impervious Surface" and replacing it with the phrase "Percent Maximum Ground Coverage" and (b) striking the footnote reading "Impervious surface is determined by runoff coefficients which have been established in civil engineering practices for all types of ground cover. For example, concrete has a runoff coefficient of 1.0. Therefore, the effective impervious surface is the sum or composite of all runoff coefficients multiplied by the amount of land in each kind of ground cover, divided by the total area under development." and replacing it with "Ground coverage means any paved, hardened, or structural surface, including, but not limited to, buildings, driveways, parking areas, patios, streets, swimming pools, dams, tennis courts, and other structures."

BE IT FURTHER RESOLVED that the Commission's Executive Director is authorized and instructed to revise the Commission's Rules and Regulations pursuant to the Metropolitan River Protection Act so as to incorporate the terms of this Resolution.

BE IT FURTHER RESOLVED that since the estimated flood elevations in the cited "Chattahoochee River Flood Plain Information Report" are for Chattahoochee River flood flows only, and since these elevations may need refinement in the immediate vicinity of tributary streams as a result of floods on the individual streams, the Commission authorizes the Executive Director to seek the assistance of appropriate federal agencies in defining estimated flood elevations near tributary streams and to present the results of such studies for Commission approval when such studies are completed.

I certify that this resolution was duly adopted by the Atlanta Regional Commission at its regular meeting held on October 22, 1975, a quorum of said Commission members being present at said meeting.

Beverly A. Rhea

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Chattahoochee Corridor Study

This study has been conducted in cooperation with the North Georgia Mountains Authority. It was aided by a grant from the Department of Housing and Urban Development under the Urban Planning Assistance Program authorized by Section 701 of the Housing Act of 1954, as amended.

ARC
ATLANTA REGIONAL COMMISSION
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ATLANTA, GEORGIA 30303
JULY 6, 1972
Tel. (404) 522-7577

Foreword

Over the short span of two years the Chattahoochee River, as it flows through the northern half of the Atlanta Region, has become a battleground. The popular phrase developed: "The conflicts are irreconcilable."

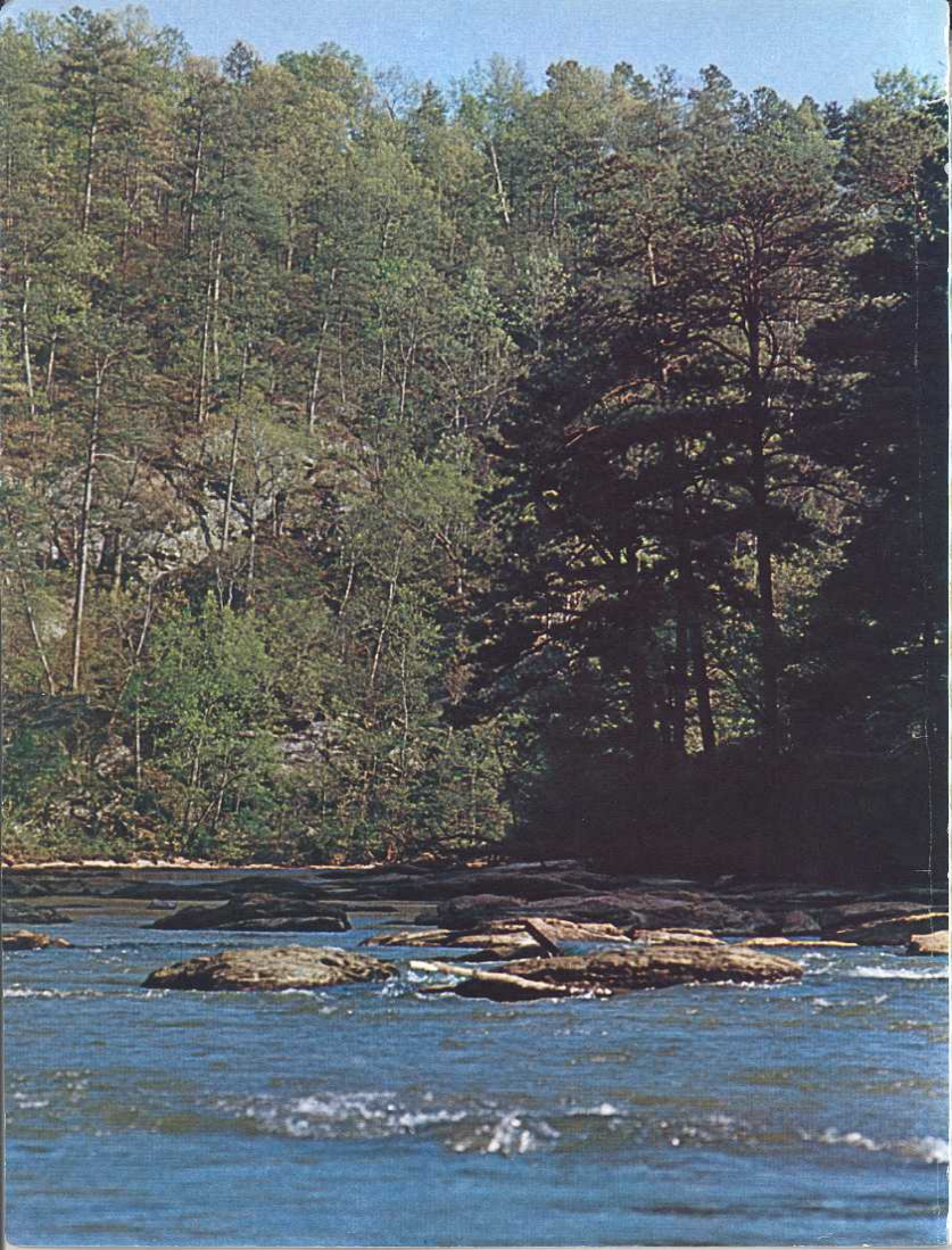
The existence of this study is a declaration that there is substantial ground for agreement; improvements over existing situations are possible; and conflicts can be resolved.

Section 2 of Act 5, Georgia Laws 1971, in creating the Atlanta Regional Commission states, "It is in the public interest to create an agency . . . to provide policy direction for the solution of common problems through short and long-range comprehensive planning."

The Atlanta Regional Commission's responsibilities regarding the Chattahoochee are clear. In response, the Commission:

- Directed its staff to prepare a comprehensive plan for the River Corridor;
- Authorized the Executive Director to ask all governments in the Chattahoochee Corridor to hold all zoning applications in abeyance until completion of the study; and
- Decided to activate its power to review Area Plans within the Chattahoochee Corridor effective July 1, 1972.

This report is the completion of the study and a presentation of the Corridor plan. It is organized in a manner designed to lead the reader through the study in the same sequence in which it was conducted. It is technical only where necessary in order to understand the basics of the study. Any citizen interested in further details may make use of backup monographs and maps on file with the Atlanta Regional Commission.



Contents

The River And The Region

What does the Chattahoochee River mean to metropolitan Atlanta? The answer is not as simple as the question.

The Chattahoochee River begins as only a tiny dribble in the north Georgia mountains, becomes a major lake north of Atlanta, flows through the metropolitan community, and eventually finds its way into the Gulf of Mexico.

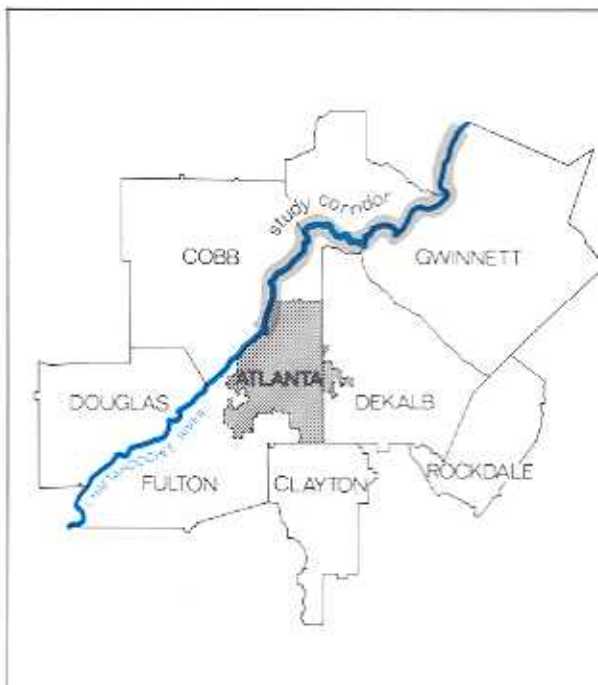
To greater Atlanta, the River means water for over a million people. Unlike many large cities, Atlanta depends entirely on the generosity of her free-flowing rivers for water, rather than piping from underground sources or drawing from lakes and reservoirs. In return, she gives the River perhaps the largest concentrated volume of municipal sewage in the southeastern United States. Fortunately, only few large water-using industries contribute significantly to the waste load.

The River also means electric power, generated by two hydroelectric and two fossil fuel burning power plants along its 100-mile course through the metropolitan area.

Strangely, few citizens knew or cared about the River until the late 1960's, except a handful of riverside residents and local trout fishermen. As long as water poured from the tap and light bulbs burned brightly, the Chattahoochee wa doing all that was asked of it. Who could hav foreseen the bitter clashes to follow?

Almost overnight Atlanta awakened to the Cha tahoochee's emerging potentials—and woe Maybe it was the tenor of the times, the enviro mental movement that substituted public conce for public complacency. Possibly the city note for her long-standing love affair with her woode hills could no longer take nature's endowment f granted.

Literally thousands of canoeists, rafters, an tubers joined the ranks of River admirers. Mo had to resort to trespass on a River practica devoid of any public access. Floaters discovere for themselves the Chattahoochee's rapids an lazy waters, sheer cliffs, forested hills, an green floodlands. Many ended up in the clea chilly water. Hikers, students, and families stroll through woods and along riverside trails, e joying the great outdoors just a few miles fro the center of a bustling city. They, too, tre passed while exploring Civil War ruins and a cient Indian rock shelters.



The Chattahoochee was taking on new meaning.

In September, 1970, the Secretary of the Interior ordered the Bureau of Outdoor Recreation to produce a park plan for the River. The River was suddenly under consideration as an urban national park. This idea eventually floundered, but public outcry to "Save Our Chattahoochee" remained at high pitch.

A legislative proposal in the 1971 Georgia General Assembly fanned the fires of public sentiment. The Chattahoochee River bill attempted to place the River and its environs under the protective aegis of a State agency. Aroused parties on both sides of the controversy packed the halls for hearings and legislative deliberations.The bill failed.

During the second round of legislative furor, the newly established Atlanta Regional Commission placed itself in the forefront of the Chattahoochee issue. Motivated by a belief that metropolitan Atlanta should face its own problems squarely, regardless of the heat being generated by the issue, the Commission instructed its staff to prepare a comprehensive plan for the Chattahoochee Corridor. In addition, the Commission asked for, and received, a voluntary moratorium on rezoning within the Corridor by the respective local governments involved.

The plan was to examine the use of the Chattahoochee and its Corridor (the land 2,000 feet on either side) for the 48-mile stretch from Buford Dam, where the River enters the Atlanta region, to the confluence with Peachtree Creek, halfway through the metropolitan area where a formerly clean river becomes heavily polluted.

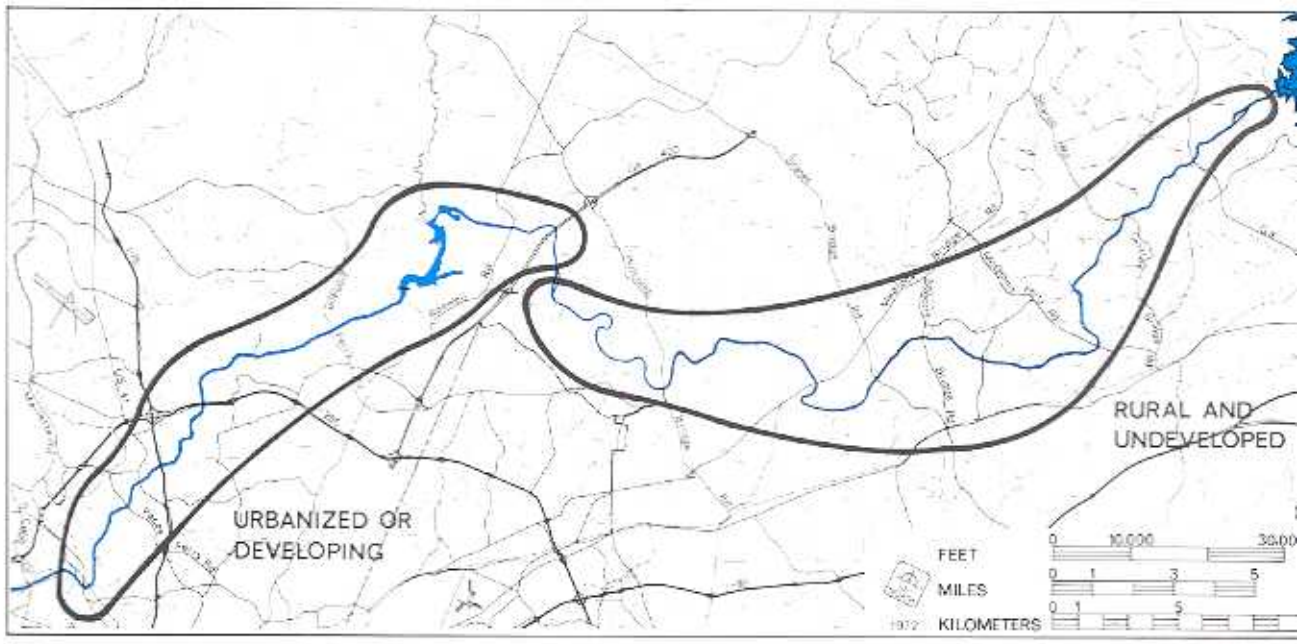
By so authorizing the Chattahoochee Corridor Study, the Atlanta Regional Commission took upon itself responsibility for answering the question, "What does the Chattahoochee mean to metropolitan Atlanta?"

This report provides the Commission's answer, in the form of a comprehensive land plan, development guides, and recommended acquisition of public lands. Succeeding chapters describe man's influence on the River Corridor; assumptions and goals for the River, as determined by the Commission; the planning process employed to achieve the goals; the plan itself; and perhaps most essential, a recommended implementation plan.

The Chattahoochee Corridor is a natural resource in the truest sense of the word. Like any other, it may be underused, exploited, or employed to its full potential. The Atlanta Regional Commission believes this balanced plan can help to realize the Chattahoochee's potential, now and in years to come.

Man's Impact On The River

Perhaps the major environmental factor affecting the River is man. Although the 48-mile stretch of the Chattahoochee River remains relatively unblemished, man has not left it entirely free of activity. An imaginary trip up the Corridor, from Peachtree Creek to Buford Dam, may help to describe what man has and has not done to the River.



URBANIZED OR DEVELOPING AREAS

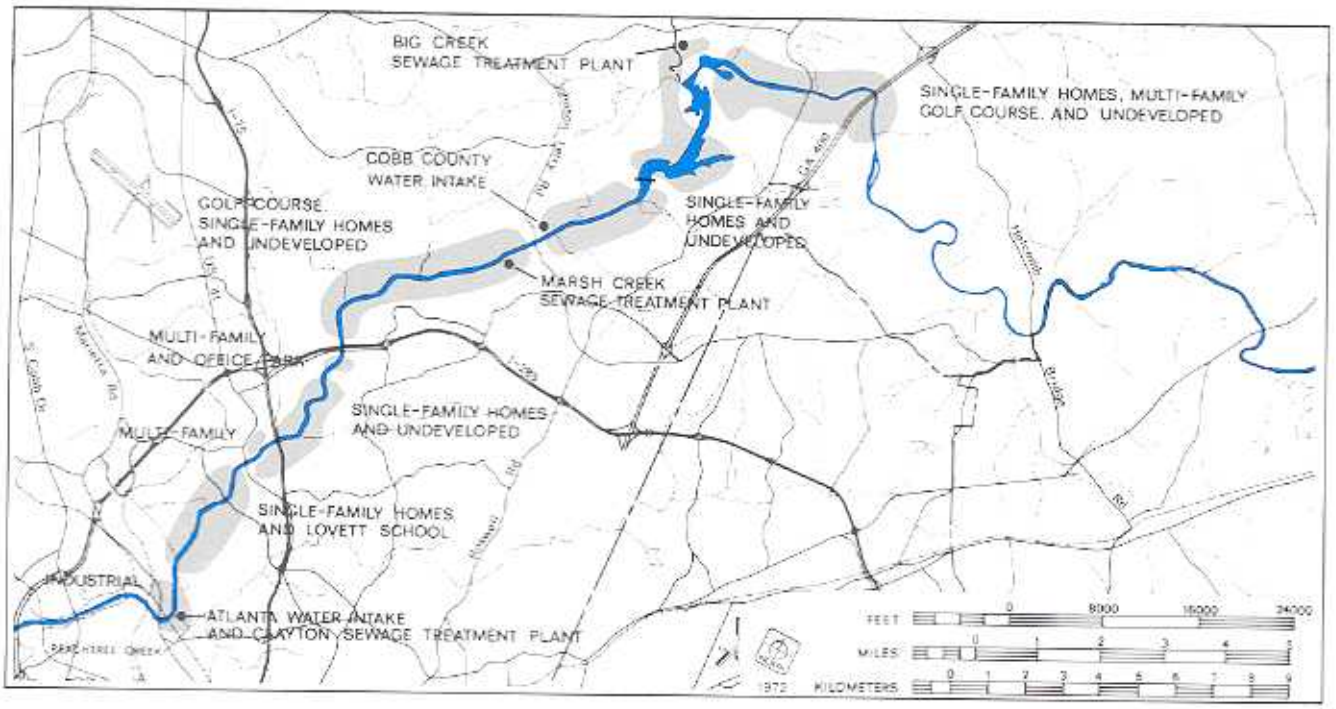
The trip begins at the southernmost point of the 48 miles—that busy bend where Peachtree Creek enters the Chattahoochee, the City of Atlanta withdraws water and discharges sewage, and where two railroads and industrialized Marietta Boulevard bridge the River. Atlanta lies on the eastern bank, Cobb County on the western bank. Soon Cobb will complete a large sewer plant at this same point, adding to the industrial atmosphere present whether one views the Bolton area from the ground, the River, or the air.

Moving north the mood changes suddenly. In the short two-plus miles from Bolton to the Paces Ferry Bridge, any semblance of heavy industrialization disappears completely, replaced by the stately beauty of some of Atlanta's loveliest residential sections.

A new bridge is under construction at Paces Ferry Road, designed to carry traffic from booming parts of Cobb County across four lanes toward Interstate 75 and downtown Atlanta. The

at the turn of the century, and as a pedestri
crossing for River sport enthusiasts, children a
tending Lovett School, and anyone else wishi
to cross without battling with speeding vehicle

From the Paces Ferry crossing to the Route
crossing, less than a mile further upstream,
single-family subdivision built partially in t
flood plain occupies the Cobb County side. Re
dents here stand to lose heavily should prolonge
periods of rain cause the River to overflow
banks. On the Fulton side Lovett School
flanked on the north and east by green, u
developed hills. U. S. Route 41, once a heav
traveled highway for both through and local tra
fic, was given a brief respite by construction
Interstate 75, paralleling Route 41 closely throu
Cobb County and into Atlanta. Recent develo
ment on Route 41, however, will probably signi
cantly increase traffic on the highway, potentia
affecting development within the Chattahooch
Corridor.



some 40 feet below. A few miles north, the Perimeter Highway (Interstate 285) crosses the River, paralleling Powers Ferry Road and the Powers Ferry one-lane bridge. From Route 41 to Interstate 285, practically no development has taken place on or near the Chattahoochee except for a few scattered homes and the start of an apartment complex. The portion of this stretch from Interstate 75 to Interstate 285 is known as the Palisades, an area of particular scenic beauty. High bluffs and rock cliffs alternate between the Fulton County and Cobb County shores, frequently overlooking shoals on the River below.

The crossing at Interstate 285 is a node of activity, the first real concentration of development upstream from the Bolton area. There, several apartment complexes and offices straddle the Perimeter; more are planned.

The next seven miles upstream, from Interstate 285 to Morgan Falls Dam, contain little development on either the Cobb or Fulton County sides. Occasional isolated homes and single-family subdivisions are located on the Fulton side, which is considerably hillier than Cobb County which consists of gently rolling wide-open spaces in this stretch. The sole River crossing in the seven

northward a couple of miles and bends east toward Roswell. At the bend, both sides of the River are in Fulton County. At Willeo Creek (the County line) and the Reservoir is Fulton County's Big Creek Sewage Treatment Plant. The Big Creek Plant, now under expansion, serves large portions of Fulton County upstream from the plant, both north and south of the River.

After the eastward bend, the Morgan Falls Reservoir gradually narrows and the Chattahoochee resumes its normal channel. Between the bend and the next crossing, at Roswell Road, development begins to pick up once again. Huntcliff, a large planned unit development of single-family homes, is on the south side of the River between the Reservoir and Roswell Road. On the north bank are a sand and gravel operation and a large hillside apartment complex where Roswell Road crosses the River. This complex is only the second group of high density residential dwellings between Bolton and Roswell Roads (the other is the concentration at Interstate 285 and the River).

The next crossing about one mile upstream is Georgia Route 400, the North Fulton Freeway. The stretch from Roswell Road to the Freeway shows signs of impending large scale develop-

here give rise to questions about the very stability of the land on which they sit. Good access roads parallel both sides of the Chattahoochee.

Upon reaching the general vicinity of the North Fulton Freeway, the trip up river has covered what might be termed the pressure part of the Chattahoochee Corridor. That is, most of the development and pressure for additional development is taking place in this southern half of the 48-mile stretch. There are several reasons:

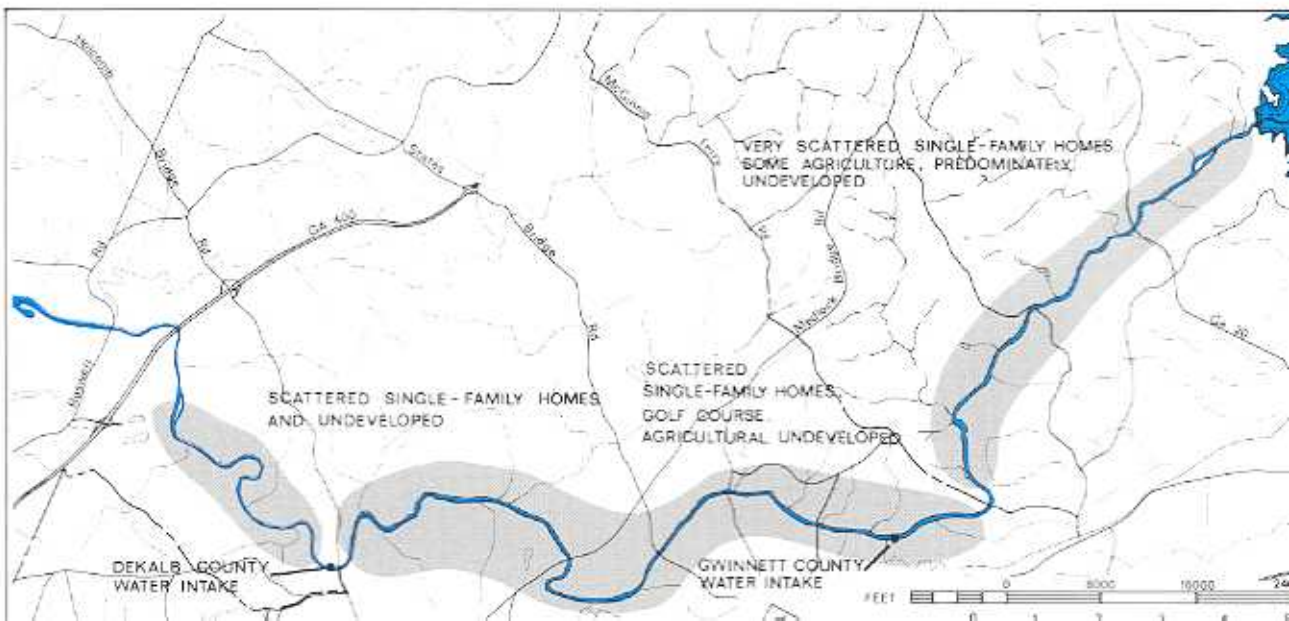
- Proximity to central Atlanta is there. The outward push of urban growth has reached the River along this length, enveloping it in places.
- Access to downtown Atlanta and other key areas of employment has been markedly enhanced by completion of the freeway network.
- Urban facilities, particularly sewers and water lines have been extended to serve the Corridor and major portions of the jurisdictions which abut it. Public water is everywhere; public sewers are under construction or planned for practically the entire length of Cobb County's River frontage; Fulton County has several lines serving Sandy Springs. Plants to treat collected sewage are in operation, or under construction or expansion.

Despite little existing development, the southe part of the Corridor has accumulated most of t public services prerequisite to urban grow These, combined with location, make this stret pressured.

RURAL AND UNDEVELOPED AREAS

From the North Fulton Freeway upstream, dev opment contrasts greatly with the portion alrea described. There is a large planned unit develo ment on the north bank, east of the North Fult Freeway. With homes built on the hillsides, a re reation area in the flood plain, and woods pr served throughout, this community demonstrat the advantages of well-planned, large-scale d velopments. From this area upstream the land quite rough. Low density development both with the Corridor and inland is scattered on bo sides. By the time one reaches Holcomb Brid Road, about eight rivermiles upstream from t North Fulton Freeway where DeKalb Cour draws its water supply, there are few signs urban growth.

Beyond Holcomb Bridge Road, Gwinnett Cour is on the south side of the River, Fulton on t north. The terrain flattens out considerably; la use turns to agriculture.



Upstream, the River is traversed only by an occasional rural road running between Fulton and Gwinnett Counties—first Medlock Bridge Road, then States Bridge Road, Abbott's Bridge Road (Georgia Route 120), and Rogers Bridge Road. The small City of Berkeley Lake rests unobtrusively near the River southeast of Duluth. A large chicken-farming operation has its barracks-like chicken houses in the Corridor at Abbott's Bridge. Very little additional evidence of urban intrusion in the Corridor is found the remainder of the way to Buford Dam. Only two more roads, both rural, cross the River—McGinnis Ferry, forming the Fulton-Forsyth County border and running into Suwanee, and Georgia Route 20, from Forsyth County into Sugar Hill.

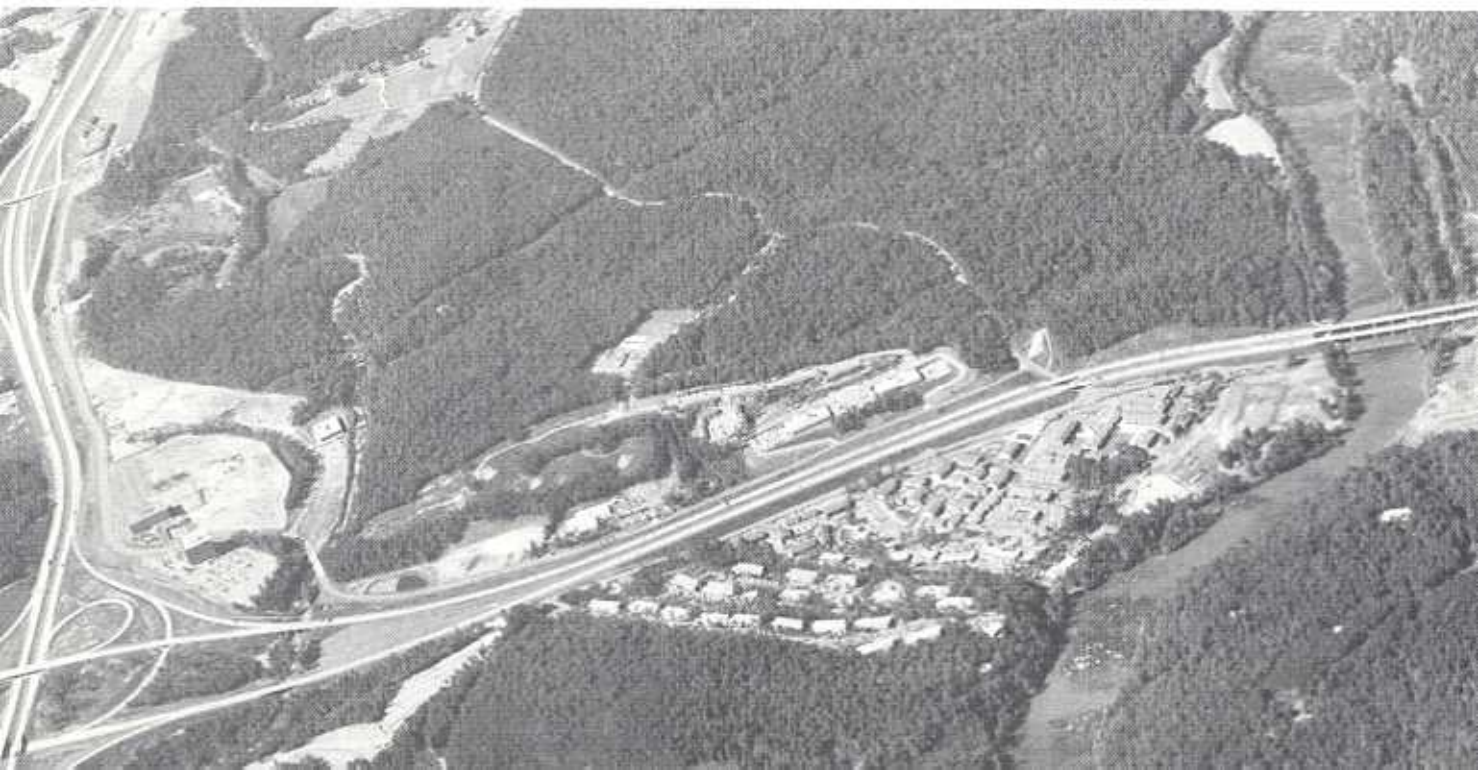
The following conclusions can be drawn about the upper half of the Chattahoochee Corridor, from the North Fulton Freeway to Buford Dam:

- Very little urban activity has taken place, either in the Corridor itself or on the land back from the River.

- None of the urban facilities needed for large-scale development have been constructed. For instance, there are no trunk sewer lines in this stretch and public water is by no means universally available.

- Agricultural operations are going concerns, not simply speculative holdings awaiting the day of urbanization. This is not to say development could not conceivably take place, but rather that no wholesale shift from agricultural to urban land uses appears imminent.

- Access and proximity to centers of urban activity are not yet adequate for large-scale residential development. This situation may well change as employment opportunities in Gwinnett and DeKalb Counties increase.



Planning For The Corridor

This chapter describes the assumptions and goals which form the foundation of the Chattahoochee Corridor Study. These were formally adopted by the Atlanta Regional Commission. They gave direction to the study and clarified what was to be accomplished through this planning effort. Repeated meetings with interested groups, professionals, citizens, and public officials proved the assumptions and goals to be sound guidelines. Articulation and adoption of this set of basic guides represented the actual beginning of the study, although preliminary work had been under way for many months. The process, or organization of the study, is also discussed.

ASSUMPTIONS

"The Chattahoochee River and lands within its Corridor will be used for a variety of hu man activities. The Chattahoochee will be an urban river."

Though many would like to preserve the Cha tahoochee in its pristine state, preventing a further change, such a policy is beyond legi and fiscal capabilities of local government. more realistic approach is to accept the urba pressures that exist and will continue to exis

"Public and private sectors will both play an important role in the ownership and deve opment of the Corridor."

The private sector has taken a more active rol in development, so far, than has the publi Given the need for providing a multitude o opportunities for River and Corridor use, th public sector must become more involved b guaranteeing public use as well as facilitatin private development.

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Local governments, through their powers o zoning, subdivision and site review, and em nent domain, have far more control over lan development than other governmental bodie To suggest otherwise would suppose whole sale transfer of such functions out of loca government, an assumption which cannot an should not be made. For the most part, it they who have the heaviest responsibility fo carrying out plans for the Corridor.

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The land use plan must deal with a realistic tim frame. Where possible, it may propose an ult mate pattern of development. In other area where development may be some years off in th future, it should recognize the need for curre land use proposals which may not represent th final or ultimate state of land development.

Priorities will be assigned to proposed publ purchases.

The plan should not recommend a land use pa tern for the Corridor which departs significant

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The plan should not recommend a land use

GOALS

The plan should provide for:

"Preservation of water quality as a principal objective."

Of the many River uses, drinking water is the most crucial. Maintaining high water quality through sound water and land management takes precedence over all other considerations.

"Protection of scenic, historic, and other unique areas."

Insensitive development threatens to ruin forever the Corridor's invaluable scenic character, as well as numerous historic and archaeological sites. Only a planned approach to land development and public purchase can assure protection of these areas.

"Protection of private property rights of landowners."

Despite the public's desire to use the River and protect the Corridor from unwise development, care must be taken to respect the rights of those who own land along the Chattahoochee.

"Controlled public access and recreational use."

Uncontrolled public use of the River and adjacent lands has presented serious problems in the past. The dearth of places for the public to gain access to the River encourages trespassing, an unhealthy situation for both the public and private owners. Far more opportunity for controlled public use should be considered.

"Location and design of land uses in such a way as to minimize the adverse impact of urban development on the River and adjacent lands."

Without proper controls, development may take place heedless of the land's ability to withstand it. This could lead to large-scale clearance of forests, bulldozing of hills and valleys, erosion, siltation of waterways, strain on public services, and drainage and flooding problems. Development should be located and designed to minimize such problems.

PROCESS

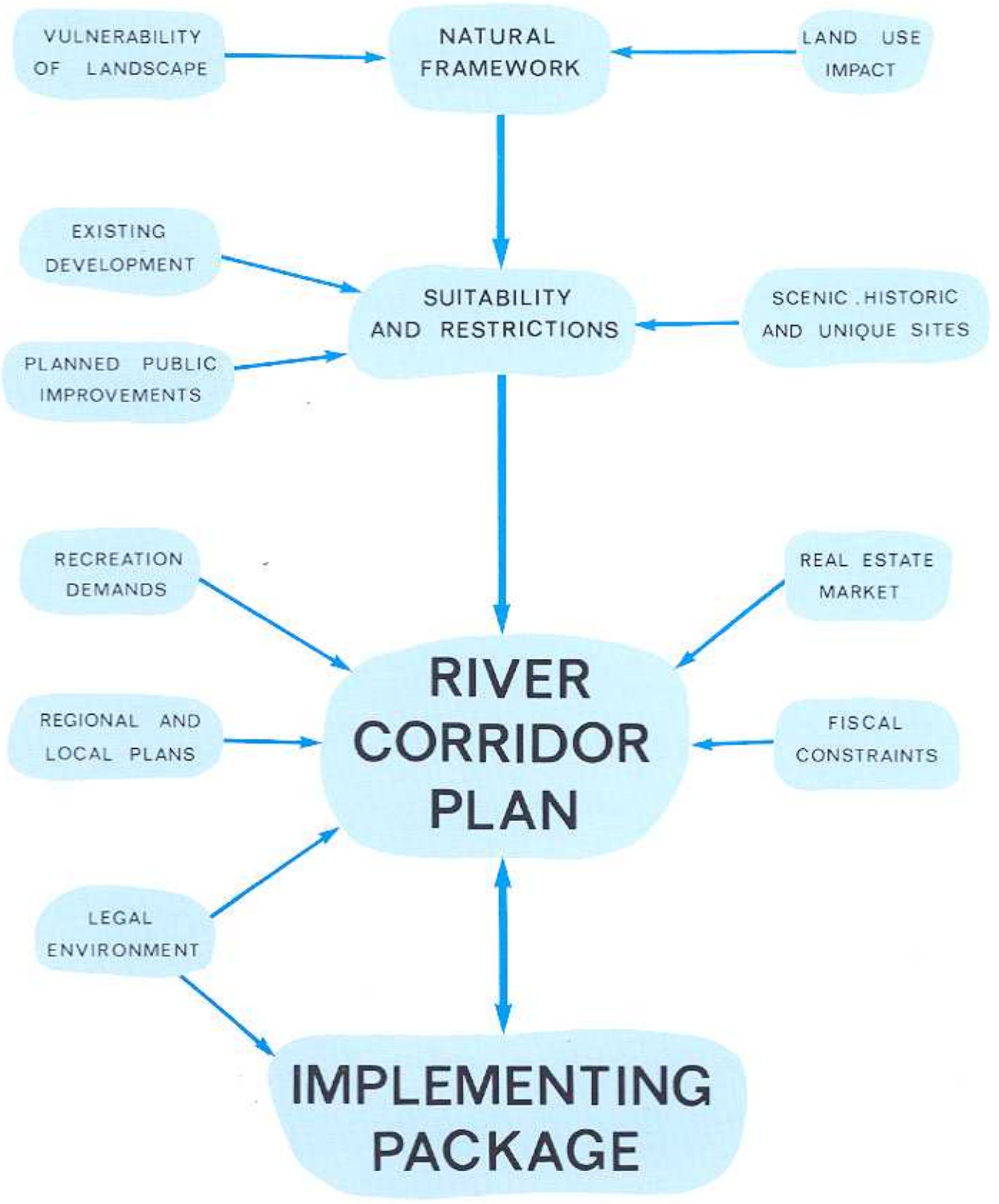
This study was designed to allow nature to deter mine what should take place in the River Corri dor. The first step was an analysis of the River' landscape from the standpoint of its vulnerabilit to development. Potential land uses for the Corri dor were also analyzed in terms of their impac on the land. Results of these analyses were use in developing standards and proposing location for public and private development. The more in tensive uses are appropriate for the less vulner able areas of the Corridor. Conversely, the mor vulnerable zones should logically be left undis turbed or developed at very low densities.

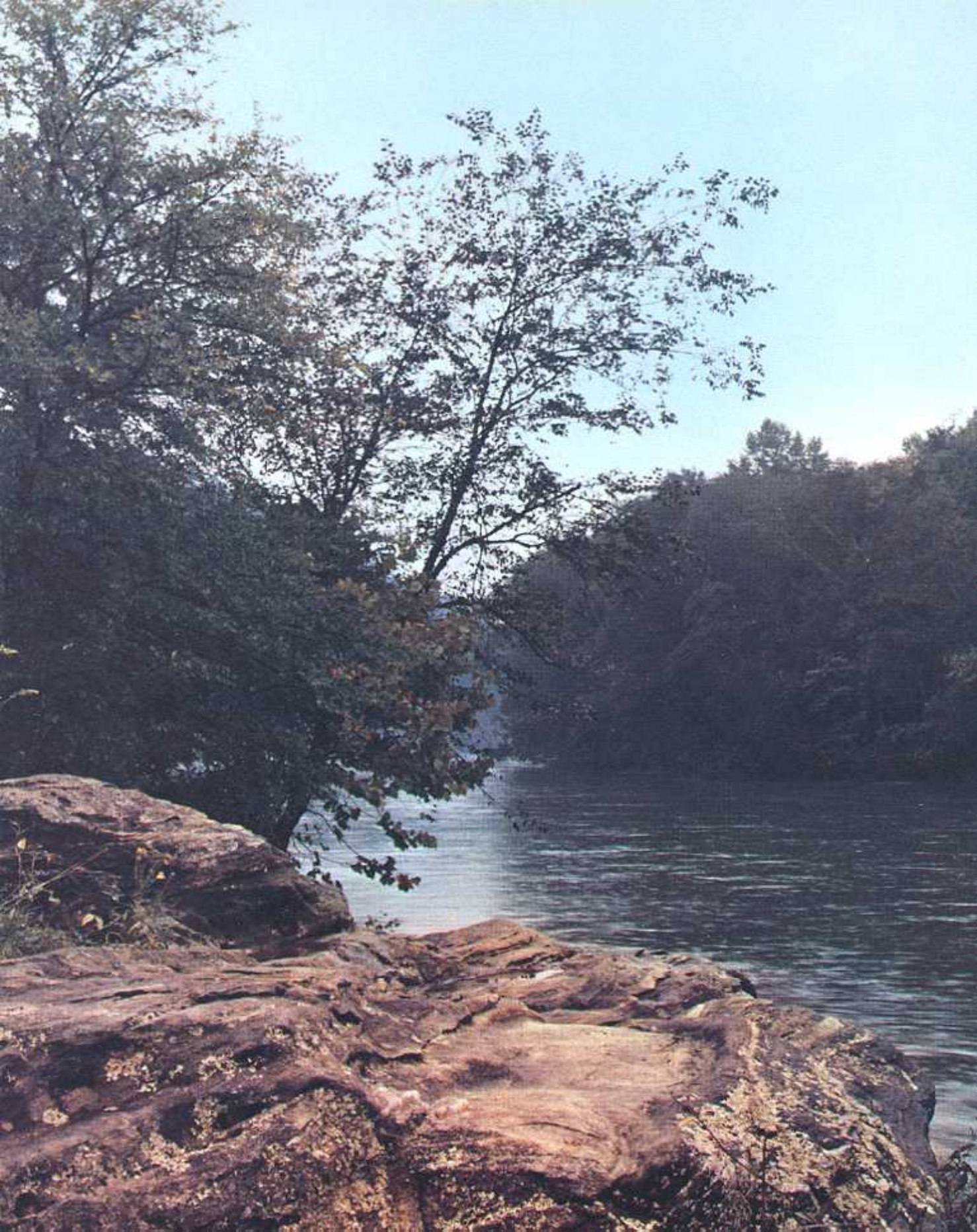
The next step was the inventorying of scenic, his toric, or other unique features. Existing land use and public facilities, such as roads, sewers, an water, were identified.

Public improvements and private development that were not yet on the ground but for whic financial or some other type of substantial com mitments had been made were treated as exist ing developments. This additional data and th natural analyses were combined to provide framework for developing the plan.

The plan considered accepted land use planning criteria, recreation demand, fiscal constraints o public investment, real estate values in the Corri dor, and existing local and regional plans. This i the guide for what should go into the Corridor.

The final planning step dealt with how things should develop within the area. Because guid ance was needed as quickly as possible, em phasis was placed on standards and implement ing machinery which could operate within th existing legal environment.


VULNERABILITY OF LANDSCAPE
NATURAL FRAMEWORK
LAND USE IMPACT
EXISTING DEVELOPMENT
SUITABILITY AND RESTRICTIONS
SCENIC . HISTORIC AND UNIQUE SITES
PLANNED PUBLIC IMPROVEMENTS
RECREATION DEMANDS
REAL ESTATE MARKET
RIVER CORRIDOR PLAN
REGIONAL AND LOCAL PLANS
FISCAL CONSTRAINTS
LEGAL ENVIRONMENT
IMPLEMENTING PACKAGE



A Natural Framework For Planning

The preservation of water quality, as the primary goal of the study, was discussed previously. As the major source of water supply, it is essential to properly manage the Chattahoochee if Atlanta is to survive and prosper. In order to develop a land use plan for the Chattahoochee Corridor that will realize this goal, it is necessary to have a clear understanding of the natural processes at work.

This chapter analyzes the natural processes affecting the Corridor and interprets them in measures of the vulnerability of the land and water to alteration and development. As the major components of the area's hydrological system, the River and its adjacent lands cannot be separated. Abusing the land has serious detrimental effects on water quality, and vice versa.

The impact of various land uses on the natural environment is also analyzed. By correlating the impact values with the measures of land vulnerability, a framework of potential land uses for the Corridor can be developed. The result of this process is not a plan but a sound basis for developing one, based on natural process and the preservation of water quality.

ELEMENTS OF WATER QUALITY

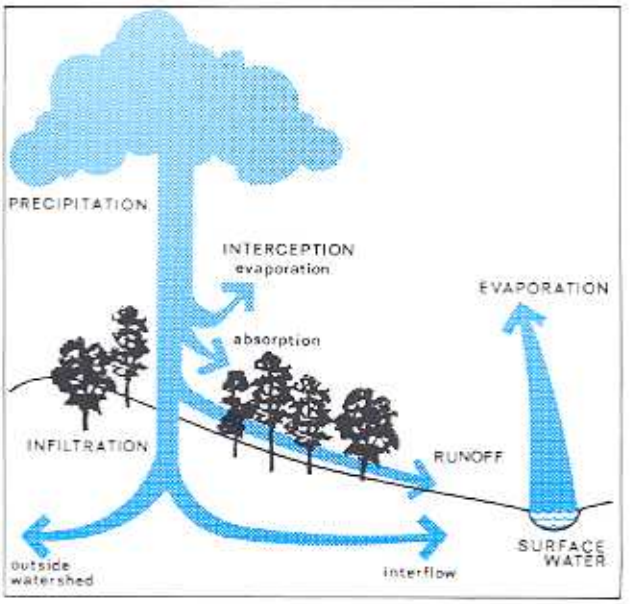
Water quality is a reflection of many complex interrelations. Simplified, it is a measure of the ability to sustain life in a body of water. The actual quality is generally measured in terms of the amount of various types of pollutants that water contains and their effect on plant and animal life, or the food chain. These pollutants are normally divided into four main categories:

Biological Oxygen Demand (BOD) Fish and other aquatic life thrive on high levels of dissolved oxygen (DO). Organic wastes from industrial and commercial discharges, sewage, and runoff from both fertilized land and urban areas contain organisms which consume this oxygen, thus killing dependent aquatic life. The amount of oxygen consumed by these organic wastes is measured in terms of BOD.

Bacterial Pollution The amount of bacteria contained in water, which can be harmful if consumed or contacted in great enough quantities, is measured in terms of a fecal coliform count. Pollution of this type is generally the result of untreated or partially treated sewage entering waterways.

Suspended Solids and Turbidity These are measures of the amount of silt and dirt in water. Although inorganic, they cause high treatment costs because of taste, odor, and visual considerations. Very high levels of suspended solids can also scour river beds of nutrients essential to the food chain.

Thermal Pollution Temperature is a critical measure of water quality since dissolved oxygen decreases as temperature increases. Runoff and waste discharges tend to increase water temperature and decrease the rate of decomposition of organic wastes.



Effects of Runoff and Erosion

Precipitation appears as surface runoff only after ground sources are saturated and interception by vegetation has occurred. This flow of surface runoff is determined by the ability of the surface to absorb water and the rate at which the water travels. Flow increases with increased areas of impervious surface (any surface which prevents the absorption of water into the ground), steeper slopes, and increased clearing of natural vegetation.

Runoff from streets and roofs is generally faster, hotter, and its peak flow is greater than that from nonurbanized areas. In urban areas it is also highly polluted with organic wastes from such sources as street litter, animal wastes, and air pollution settlement.

Erosion, which is a result of runoff, produces sediment in streams and is a function of many vegetative cover, erosion presents the greatest of slope, and vegetation cover. In general, mature forests are better able to hold their soil than younger forms of vegetation. Weathering of exposed bedrock also varies greatly according to type, exposure, and angle of repose.

During construction, when the soil is stripped of vegetative cover, erosion presents the greatest problem. Tonnages of sediment from an acre of ground under construction may be 20,000-40,000 times greater than the amount eroded from farmlands over the same period. Sediment yield is also far greater for an urbanized than a non-urbanized basin (200-500 tons per square mile per year on the average).

The control of runoff is essential to the preservation of water quality. Density and frequency of development, distance to the stream channel, and adequate erosion control measures are critical to the proper control of urban runoff.

Water Quality in the Chattahoochee Study Corridor

The Chattahoochee River between Buford Dam and Peachtree Creek is fed by intermittent releases through the Dam; the average release is 1,040 million gallons per day. Water quality in Lake Lanier is good at present, though the future is somewhat uncertain due to the high intensity recreation developments proposed around the Lake. Streams and creeks flowing directly into the River contribute about one-fifth of its flow.

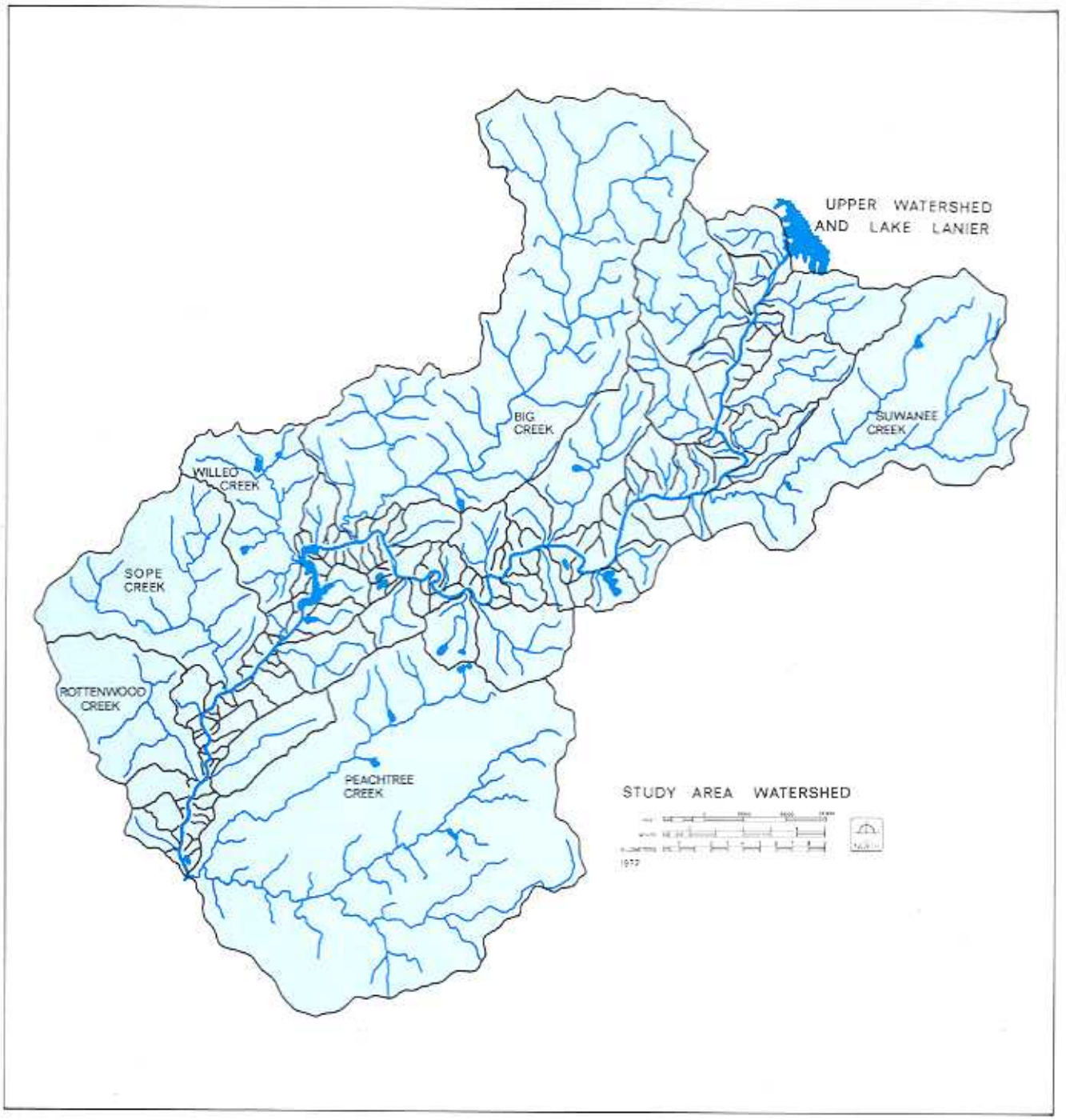
Characteristics of the watershed area are as follows:

From these figures, it can be seen that the quality of water in the Chattahoochee will be only as good as the quality of water in Lake Lanier. For the purposes of this study, the quality of water coming out of the Lake was considered a given. A future study of the water quality of the entire region will consider the Lake Lanier situation in depth. The objective of this analysis is to insure that water discharged from Lake Lanier does not deteriorate as it makes its way to Atlanta.

The water quality of the Chattahoochee above Peachtree Creek is very good at present; it is approximately half the critical level for potable water established by the Georgia Water Quality Control Board. Water released from the bottom of Lake Lanier is quite cold (6 degrees Centigrade) and practically devoid of dissolved oxygen. Oxygen recovery is rapid, but the low temperatures affect the number and variety of marine life in the entire study area. The waters are cold enough to support trout, but not cold enough for them to breed; therefore, they must be stocked continually. Below Peachtree Creek water quality deteriorates dramatically because of municipal and industrial waste discharges, with pollution levels increasing as much at 1,000 times.

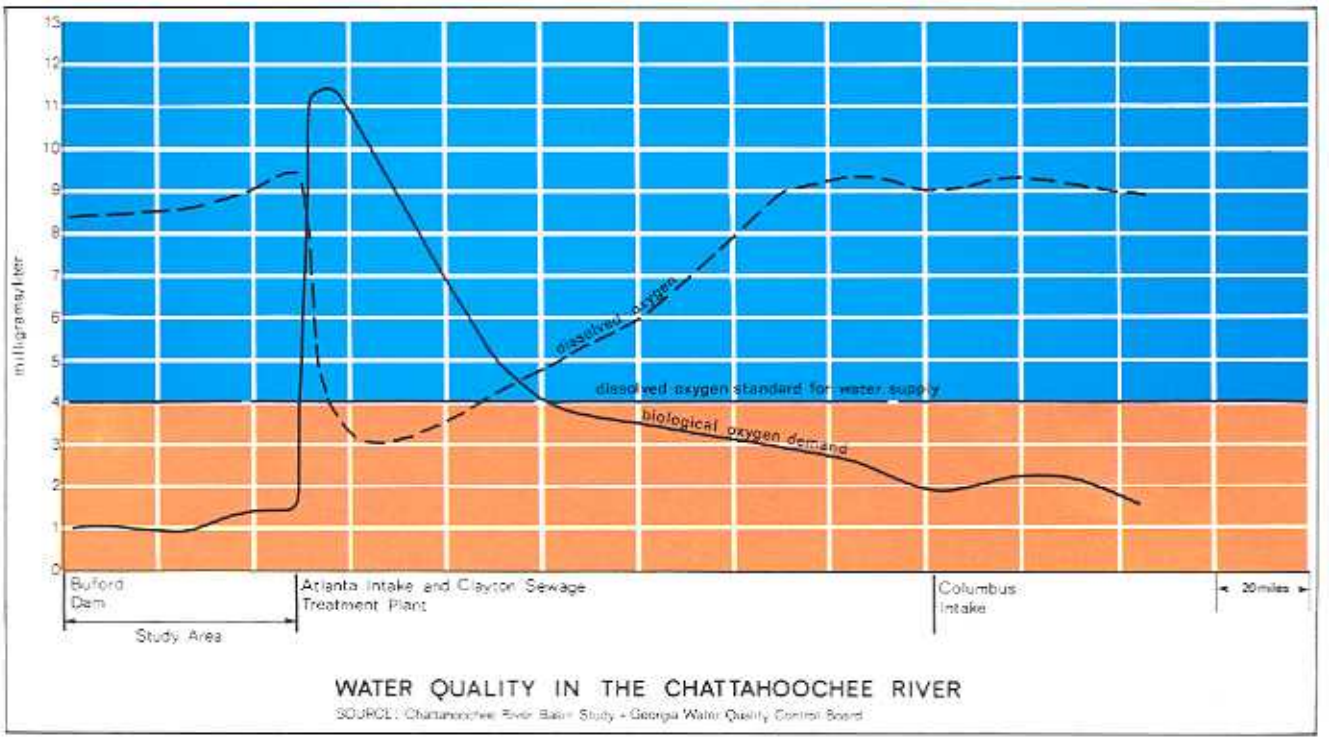
With a regional annual rainfall of 52 inches, pollution loads from runoff present a potentially critical problem as the Corridor and study area watershed urbanizes. High levels of suspended solids and turbidity generally result when graded areas are left exposed during periods of heavy rainfall. For example, counts taken at a Game Creek development during June, 1971 (a dry month) and July, 1971 (a wet month) showed an

	Drainage Area (square miles)	Yearly Average Flow (cubic feet/second)
Upper Watershed and Lake Lanier	**1,060**	**2,110**
Study Area Watershed	**390**	**422**
Total	**1,450**	**2,532**



increase of sediment yield from 200 to 850 tons per day. Turbidity levels have been rising in the Chattahoochee since the mid-1960's after having fallen steadily since the advent of soil conservation practices in the 1930's. The relative consistency of both the area's rainfall and the releases from Buford and Morgan Falls Dams indicates that these increases can only be attributed to expanding development within the study area watershed. Peak discharges from Buford Dam have been blamed for much of the Chattahoochee Basin's erosion problem, but data indicate that they represent only a small fraction of the total sediment yield in the Corridor.

Pollution from urban runoff has been well documented. In the Peachtree Creek Basin these pollutants have been estimated to be equivalent to the untreated sewage of a town of 3,500 population. Bacteria levels of a load this size are well

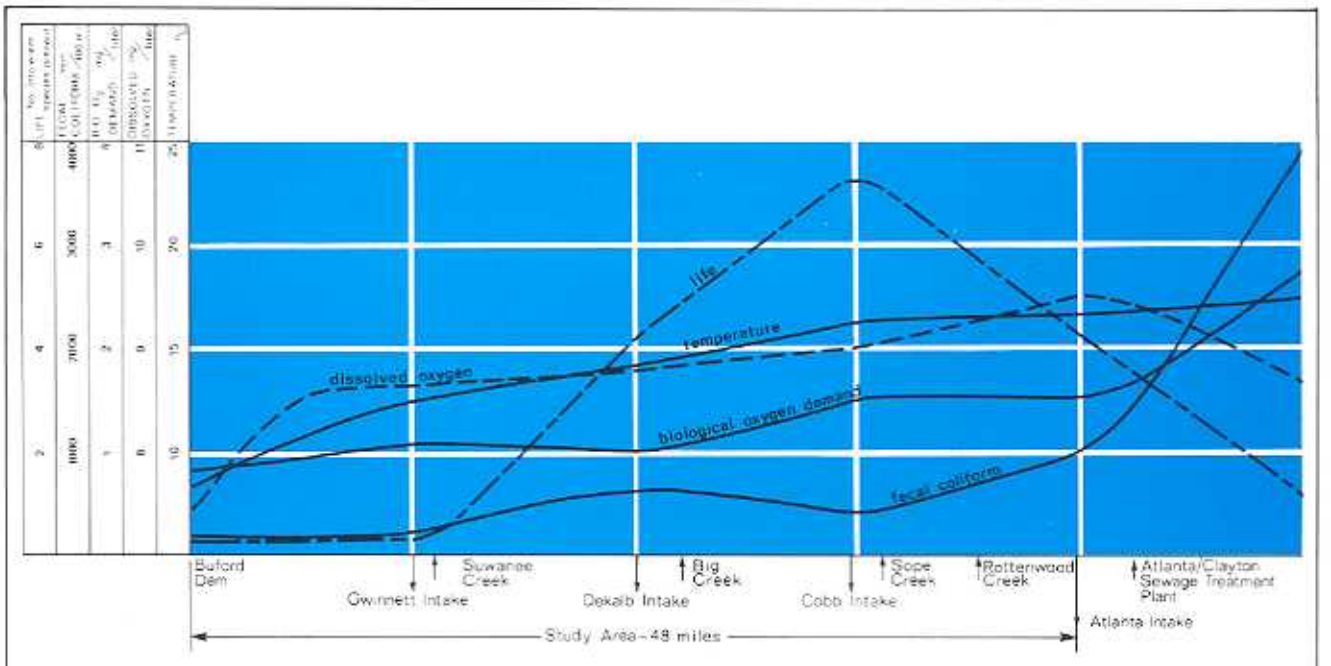


WATER QUALITY IN THE CHATTAHOOCHEE RIVER

SOURCE: Chattahoochee River Basin Study + Georgia Water Quality Control Board

below standards set for potable water supply. Since similar development is possible within the study area watershed, the importance of controlling runoff is especially critical since four water intakes are located within the study Corridor.

Effective storm drainage and erosion control practices are essential in meeting this problem, but of primary importance is the wise and effective use of the land resources within the Corridor. The land vulnerability analysis which follows provides the framework for this effort.

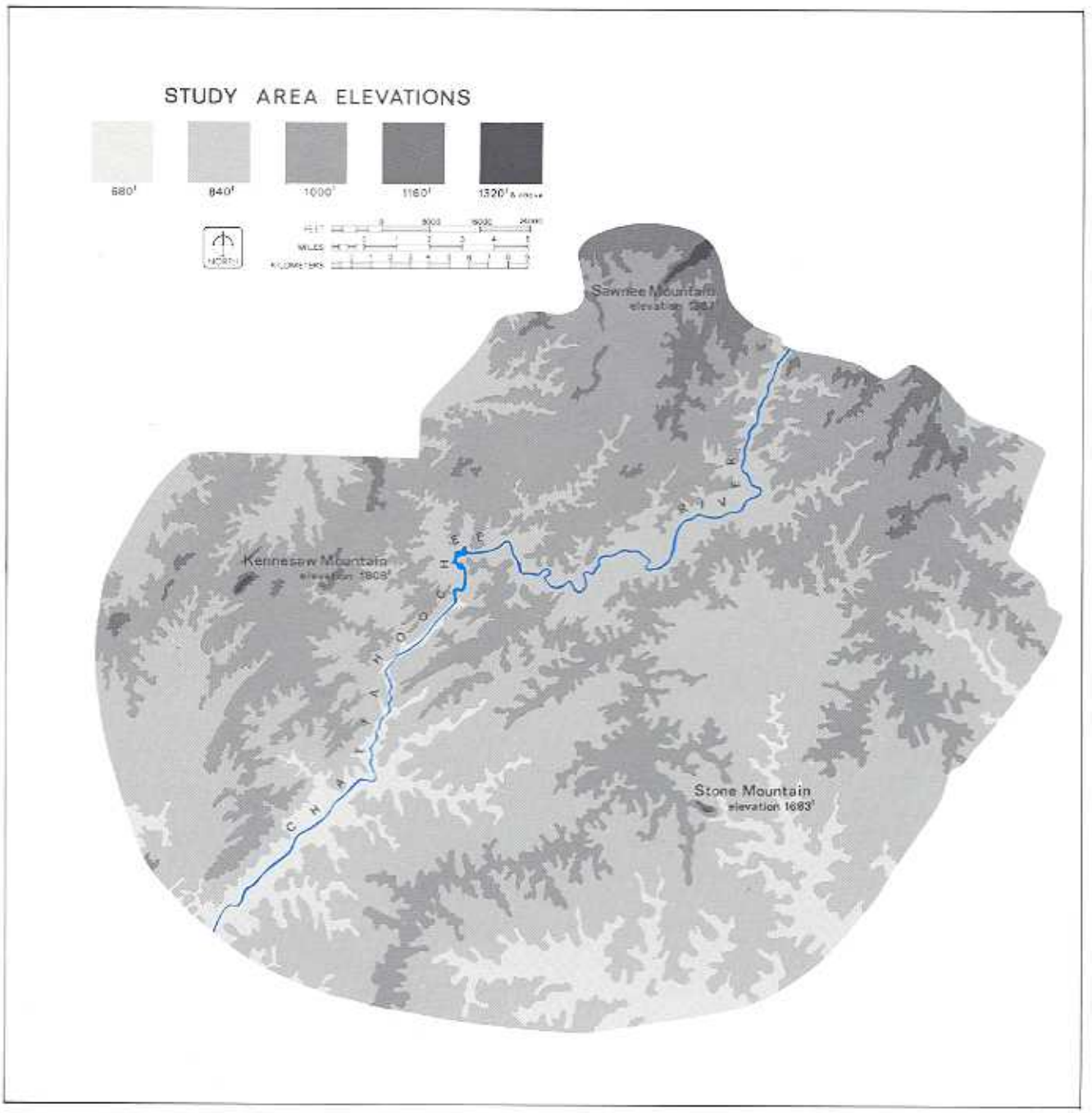


WATER QUALITY IN THE CHATTAHOOCHEE CORRIDOR STUDY AREA

SOURCE: Chattahoochee River Basin Study + Georgia Water Quality Control Board

LAND VULNERABILITY ANALYSIS

The Piedmont Plateau is a moderately hilly upland area with elevations generally ranging between 740 and 1,250 feet above sea level. In some localized areas, such as the Chattahoochee River Corridor, the terrain becomes rugged and extremely hilly, whereas the majority of the region consists of rolling plains. An interesting feature of the local topography is the 1,000-foot contour which runs diagonally down the watershed on either side of the River Corridor. This contour generally is the division between terrain characteristics. Above the line is found the more gently rolling land with flat plateaus and ridgetops. Below, the slope becomes substantially more acute with steep ravines and gorges following the major drainage channels that separate the higher, flatter lands. The River Corridor itself is extremely varied, ranging from rock out-croppings and steep bluffs in the southern extreme to gentle sloping farmland at the northern end.



Analysis

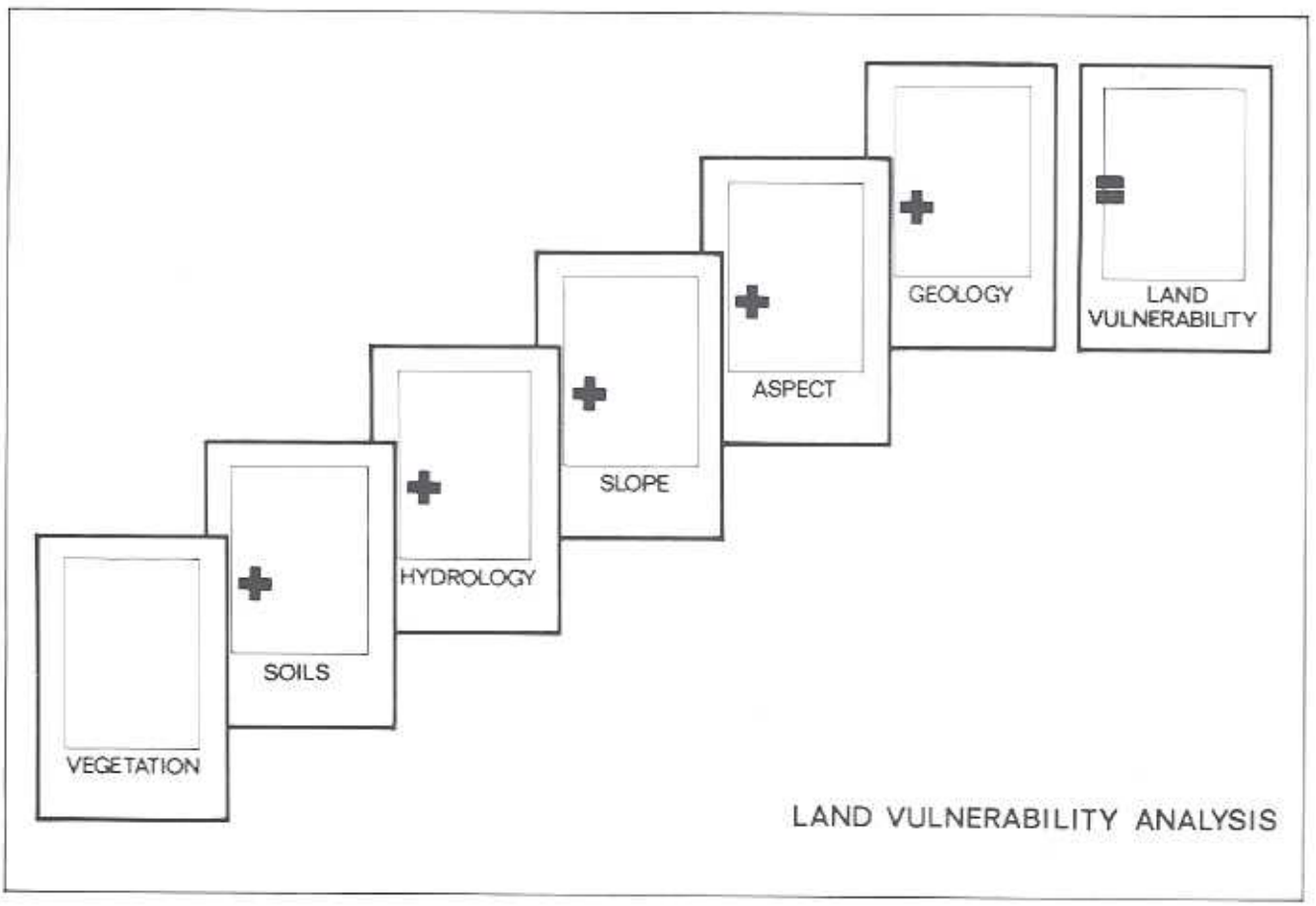
The discussion of water quality and land quality in the Chattahoochee River Corridor and surrounding watershed poses two fundamental questions: (1) How vulnerable are the land and the water to the impact of land development? and (2) How can development be controlled so as to minimize negative effects?

Methods and data are insufficient for the scope of this study to quantify specific measures of water quality (i.e., suspended solids, fecal coliform, BOD) for any single development or development practice. However, it is possible to measure the vulnerability of the land to development in general, and to correlate that with the impact of various types of development. Thus, the negative effects of development can be minimized by not allowing more development than the land or water can sustain. In essence, one is asking, "What does the natural environment say about what and where one can build?"

Six characteristics of the natural environment were selected for analysis: vegetation, soils, hydrology, slope, aspect, and geology. Data for each characteristic were collected and mapped for the entire Corridor on 23 maps at a scale of 1 inch equals 400 feet.

To portray the relative importance of these six characteristics, a weighting system based on a maximum score of 100 points was established. Vegetation, soils and hydrology, which are the most critical natural characteristics in the Corridor were allotted a possible 20 points each, slope and aspect 15, and geology which is not as critical in the Corridor was allotted 10 points. Each characteristic was then broken down into subgroups, with each being ranked according to vulnerability to development. In all cases, the lowest scores represent those subgroups of the given characteristics that are most suitable for supporting development.

The maps appearing on the following pages illustrating the classification of various features are only one sheet of 23 in the River Corridor set. They are shown for information only. Complete map sets are on file with the Atlanta Regional Commission.



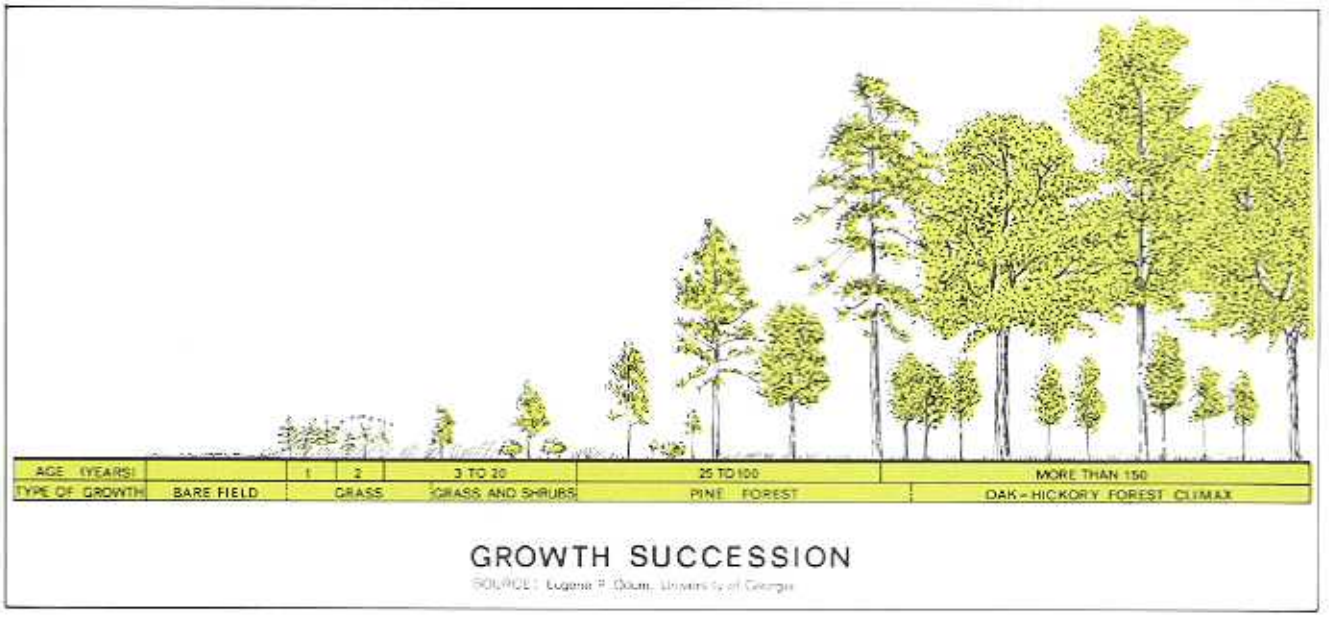
Vegetation The original vegetation of the Georgia Piedmont Region consisted primarily of hardwood forests of the oak-hickory community. However, due to the extensive intervention of man for urban and agricultural uses, it is difficult today to find any set vegetation pattern. Remnants of the original forests can be found only in isolated areas, such as steep slopes and ravines, too difficult to farm or develop. In the southern portion of the study area where the terrain is varied, pines can generally be found on ridgetops and southern exposures while the hardwoods are found along streams, ravines, and slopes. In the upper part of the study area the land has been extensively cleared for over a century. Here broken patterns of fields, pines, and mixed oak-pine forests, usually following old land lot lines, can be found. Older forest lands of oak-pine-hickory are found as the topography becomes more varied toward Buford Dam.

In general, as vegetation tends toward a climax state (hardwoods) in its natural succession, its ability to retain soil and to absorb surface runoff will increase. The topsoil of climax vegetation is of such high quality that it acts as a sponge for the absorption of surface water. Over an area with mixed vegetation, development on lands where high runoff and erosion already exist will produce the least impact. This essentially means that barren land should be developed where possible, and forested areas, espcially the hardwood communities such as oak-hickory, should be protected.

It is also desirable to protect climax vegetation because, if cleared, it will take much longer to return through natural succession. Any alteration of this relatively moist climax growth will also have a drying out effect on the land, reducing the diversity of species and creating the potential of a reversion to an unstable state. Forested lands are also important as wildlife habitats and as prime oxygen producers.

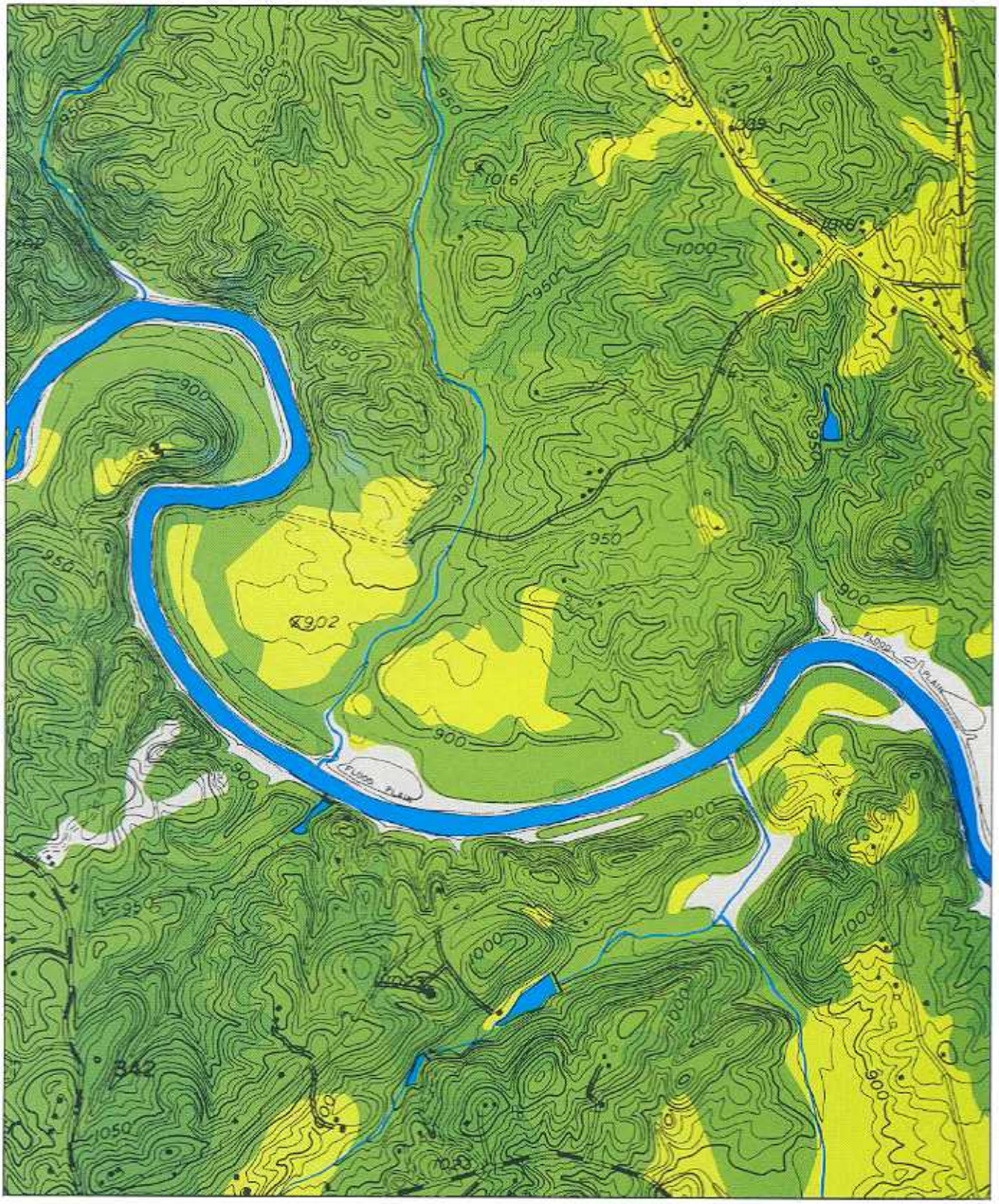
Eight vegetation communities were identified in the Corridor. These were combined into four basic vulnerability categories reflecting the main stages of vegetation succession; then mapped and ranked as follows:

Subgroup	Rank
Barren land	2 Least Vulnerable
Open field	10
Pines (subclimax)	15
Hardwood (climax)	20 Most Vulnerable



GROWTH SUCCESSION

SOURCE: Eugene P. Odum, University of Georgia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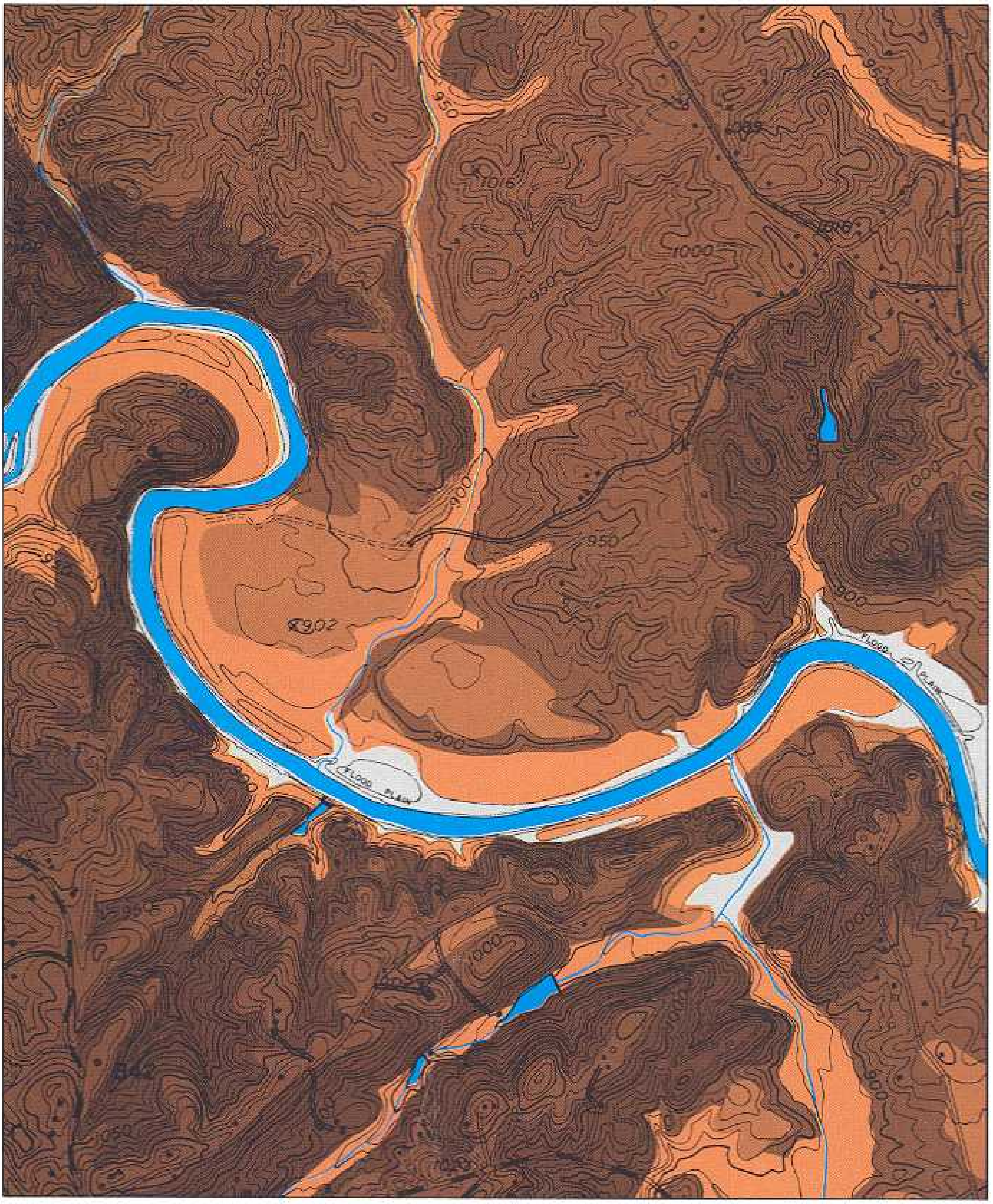
Soils Soils which are least susceptible to erosion have the least land vulnerability and are therefore better suited for development. The United States Soil Conservation Service evaluated the erodibility of the soils found in each of the counties within the study area watershed, taking into account the following characteristics: (1) length, steepness, shape and complexity of slope, (2) resistance to dispersion, splashing, abrasion and transportation by runoff, (3) permeability, (4) infiltration of water into the soil, and (5) total water capacity.

The Soil Conservation Service then divided the soil types into five erodibility categories based on a measure of expected soil loss with the vegetation removed and the soil in an undisturbed state. These groupings are not quantitative in nature and so were assumed to have an even distribution from group one (low erodibility) to group five (high erodibility).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Hydrology The climate of the region is temperate but humid, with mean annual temperatures of 60-62 degrees Fahrenheit, and an annual average rainfall of 52 inches. As a result of this rainfall, runoff from the streams in the study area watershed is high, ranging from 15-24 inches per year. Ground water sources in the area are not significant and the analysis was therefore limited to surface water.

The Chattahoochee River, which drains less than 400 square miles in the study area, is the major drainage channel of the Atlanta metropolitan area.

Drainage patterns influence the amount and makeup of surface runoff and are important measures of land vulnerability. In general, surface water originating at a greater distance from the River and flowing through several orders of streams before reaching it will have more opportunity for dilution of solids and assimilation of organic wastes. In addition, the amount of peak runoff will be less due to more surface absorption.

The Chattahoochee Corridor consists primarily of first order basins (smallest permanently flowing stream) and interbasins (areas which discharge runoff directly into the River). Because these small basins have little stream flow capacity, there is less chance for sediment to be diluted and for organic wastes to be assimilated. Increasing urbanization and steep slopes in the Corridor compound the problem. Therefore, the interbasins and first order basins are substantially less desirable to develop than the second and third order basins in the remainder of the watershed. Basins were mapped and ranked according to the effect development within them would have on water quality as follows:

Subgroup	Rank
Third order basin	0 Least Vulnerable
Second order basin	5
First order basin	10
Interbasin	20 Most Vulnerable


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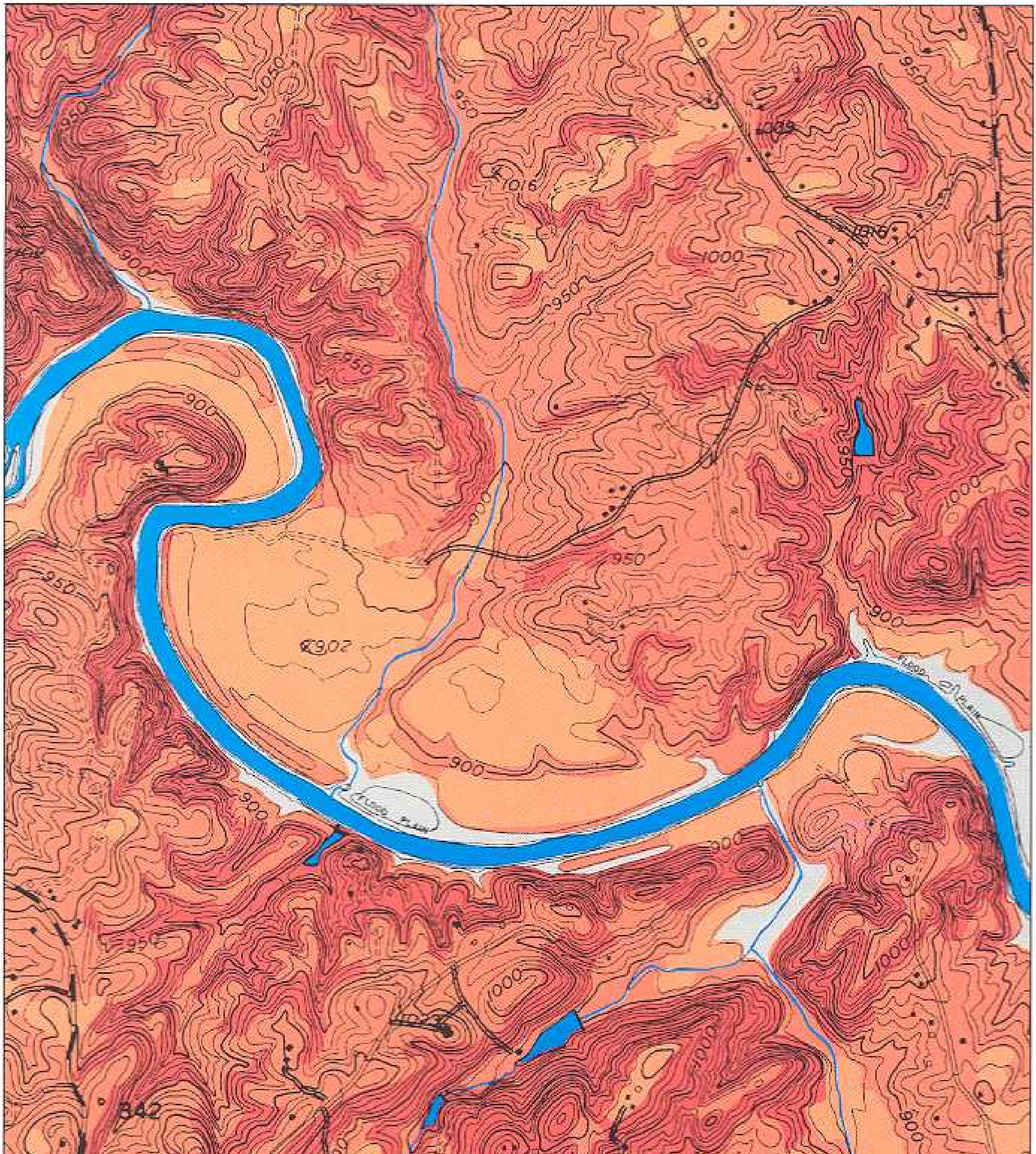
Slope Consideration of slope or the steepness of the land is reflected to some degree in each of the other five characteristics, particularly soils, where soil erodibility is primarily a function of degree of slope. It is, however, important as a separate consideration when dealing with water quality because peak runoff volume increases as slope increases.

Slopes were grouped into three categories of slope percentage. These were chosen so that they could be correlated with the slope phases of soil groupings if necessary.

Subgroup	Rank
0-10% slope	3 Least Vulnerable
11-25% slope	9
Greater than 25% slope	15 Most Vulnerable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Geology A consideration of bedrock geology in terms of its impact on surface water quality is important due to the short-term erosion of certain rock forms.

The Piedmont Plateau is underlaid with deeply weathered crystalline rocks. Biotite Gneiss is the primary rock of the region and is typical of most of the Corridor study area.

In the southernmost section, the River passes through the Brevard Fault Zone, a highly fractured area one-half to two and one-half miles wide. This zone consists of narrow aligned valleys and linear quartzite ridges. The River cutting through this zone forms gorges, rock outcroppings and river shoals, thus creating an area of high scenic and unique value known as the Palisades.

Ranking of geology, performed by the State Department of Mines, Mining and Geology, is based on erodibility, with the highest score representing the most erodible conditions. Due to a lack of detailed data, geology outside the Brevard Zone has been assumed to be primarily of Biotite Gneiss.

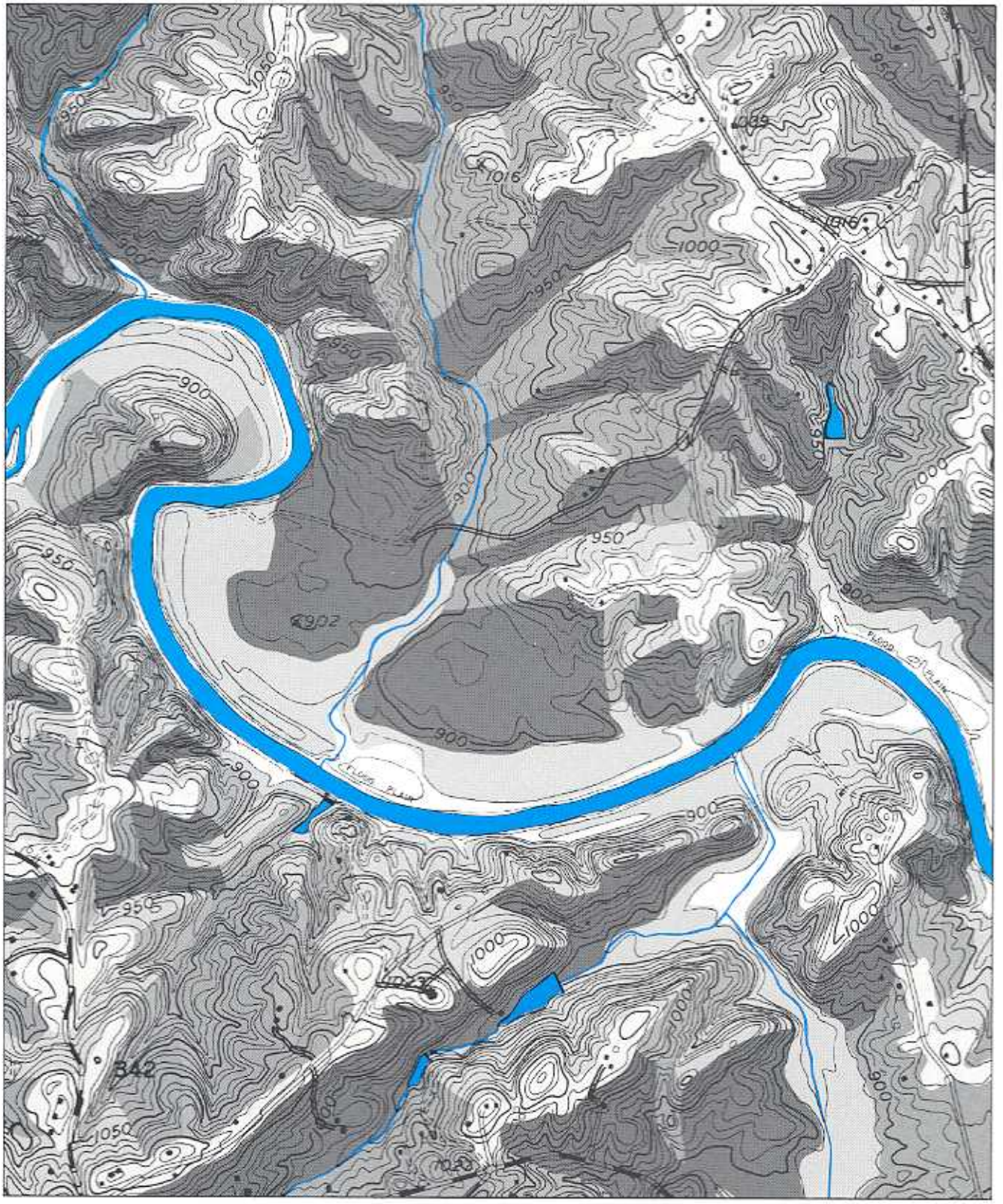
Subgroup	Rank
Upper Quartzite Unit Lower Quartzite Unit Specularite Quartzite Blastomylonite Mylonite Gneiss	2 Least Vulnerable
Muscovite-Biotite-Microcline-Quartz-Plagioclase-Gneiss Biotite-Quartz-Plagioclase-Gneiss Augen Gneiss Epidote-Biotite-Plagioclase Gneiss Intensively Sheared Granite Granite Muscovite-Biotite-Plagioclase-Gneiss	5
Graphitic-Muscovite-Quartz-Schist Ultramafic Rocks Layered Amphibolite Phyllonite Aluminous Schist Button Schist	10 Most Vulnerable

Aspect Aspect refers to the orientation of the land. It is important because the amounts of rainfall and solar energy received vary considerably with changes in aspect. For example, up to twice as much runoff will occur on a north facing slope as on one facing south due to greater rainfall on the north slope and greater evaporation on the south.

Ridges and hilltops (hot spots), which are essentially flat, do not affect runoff relative to the surrounding slopes and are already so hot and dry that development there would cause the least relative impact on the surrounding area. Likewise, development on flat bottomlands will cause less runoff than on slopes due to a greater ability to retain moisture.

Development tends to dry out surrounding areas as vegetation, which absorbs moisture, is cleared. Less drying out would occur and development would be more suitable on slopes that receive less amounts of solar energy. These were ranked from north to south according to the amounts of solar energy they receive.

Subgroup	Rank
Hot spot	3 Least Vulnerable
Bottomland	6
North slope	6
East slope	9
West slope	12
South slope	15 Most Vulnerable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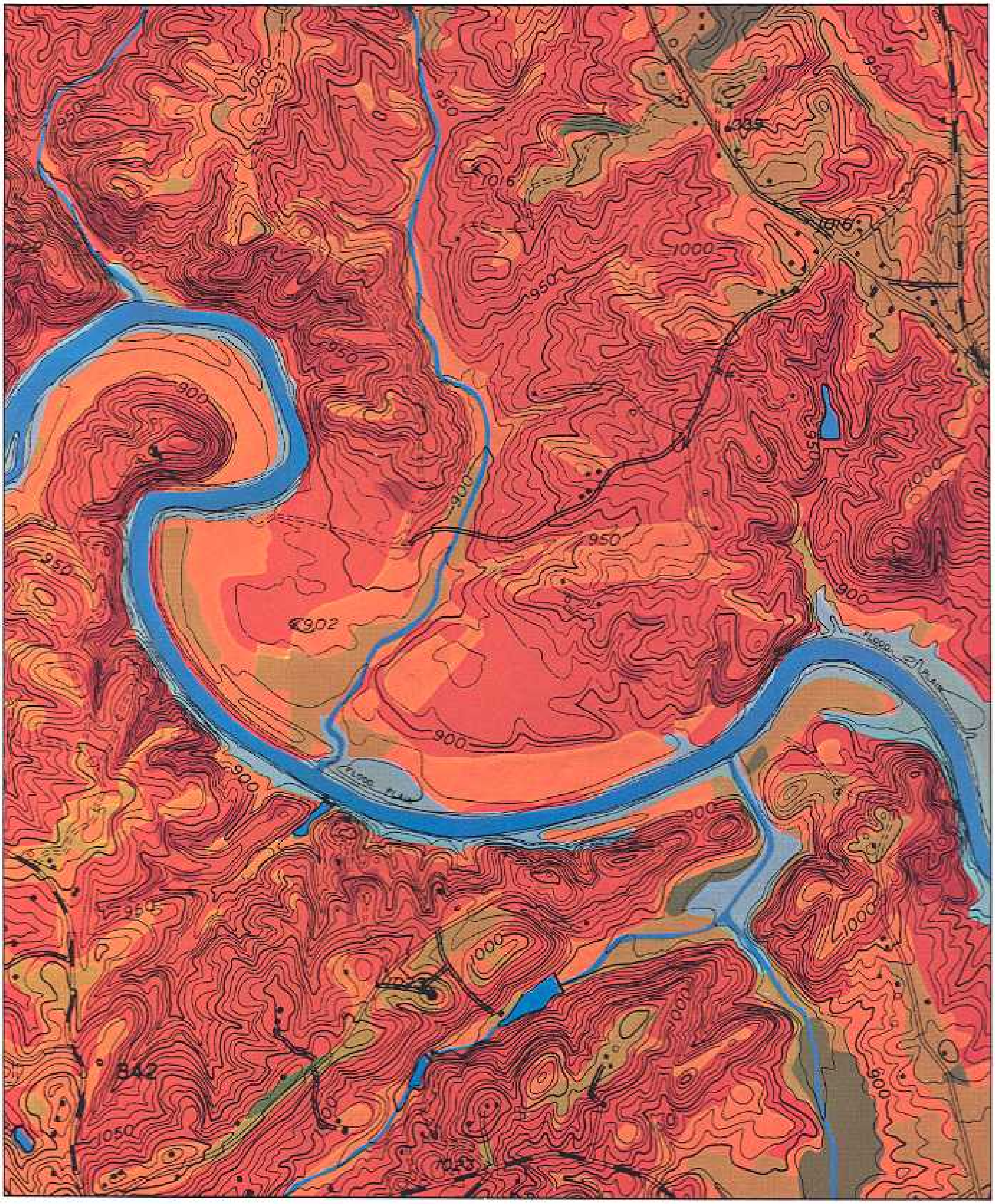
COMPOSITE

Once the six natural characteristics had been mapped and ranked, they were superimposed on one another. This provided a composite numerical score, showing relative vulnerability of the landscape and water quality to land development. The composite of final scores was then divided into six categories of vulnerability ranging from slight to severe.

Composite maps reflecting these land vulnerability categories were then prepared. They depict the relative suitability of the land for development and provide the basic framework from which the Corridor plan was developed.

Category	Vulnerability Designation	Composite Point Range
A	Slight	12-25
B		26-37
C		38-49
D		50-59
E		60-79
F	Severe	80-100



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LAND USE IMPACT ANALYSIS

The dual objective of this analysis was to determine the relative impact of a range of conventional land uses on any given piece of land in its natural state, and then to use this data in conjunction with the land vulnerability analysis to determine suitable locations for specific land uses within the Corridor.

Three principal categories of land use types likely to be considered for development in the Corridor were analyzed.

Recreation Recreation land uses were chosen to cover a wide range of possible activities. In some cases, specific uses were broken down further to cover a range of densities or intensities of use. A total of 21 conceivable recreation uses were analyzed.

Housing Thirteen housing types representing a wide range of densities, from single-family to higher density multi-family, were chosen for analysis.

Special Land uses which serve a community larger than a neighborhood comprise this category. Sixteen uses, which were considered within the realm of possibility for the Chattahoochee Corridor, were considered. Among them were: educational, commercial, institutional, and mixed type uses found in Planned Unit Developments (PUD's or CUP's).

Each of the land uses imposes a different combination of demands upon a site. For the purpose of this analysis, nine specific indices of impact were measured and evaluated for each land use type. These were divided into two broad categories: (1) Site Alteration, which is concerned with the impact resulting from the physical alteration of the site itself in terms of (a) destruction of existing natural features and (b) subsequent urbanization (i.e., buildings, roads); and (2) Human Intrusion, which deals with the impact caused by human use over a period of time.

Indices of Site Alteration

Average Maximum Slope Requirement—An indication of the cut and fill that would be required to accommodate a specific use to a particular site. The greater the cut and fill, the greater the impact.

Percentage of Clearance—The amount of clearance of natural vegetation a specific use requires.

Utility Requirement—The utility system required to serve a particular land use.

Building Area Percentage—The percentage of land that is occupied by structures for a given use.

Paved Area Percentage—The percentage of land that is paved with some impervious material (e.g., asphalt or concrete) for a given use.

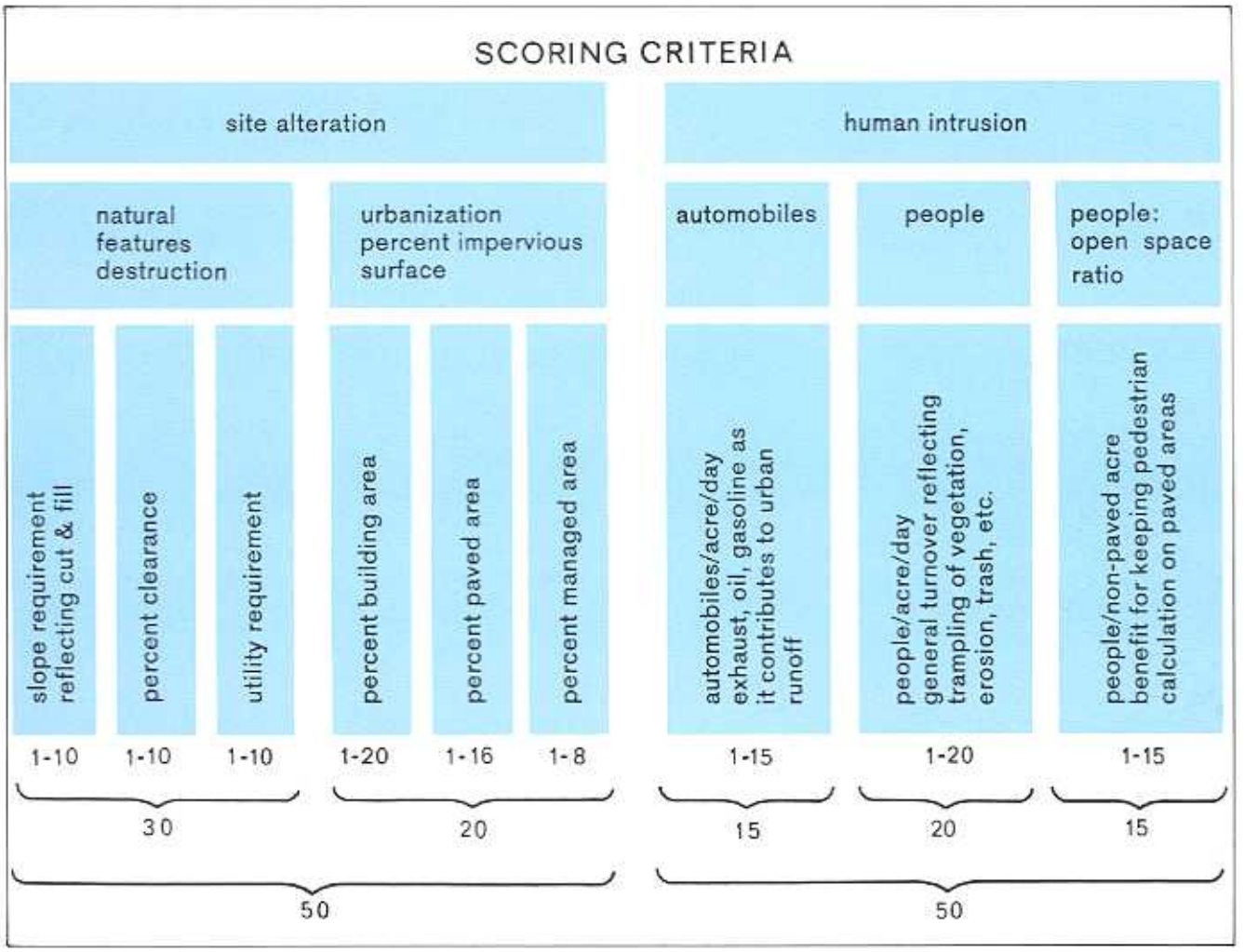
Managed Area Percentage—That percentage of land which has been selectively thinned, or cleared and replanted, and is no longer in its natural state, but which retains a porous surface and is kept under a management program.

Measures of Human Intrusion

People/Area/Day—A measure of the number of people utilizing a given area during peak periods on any given day. Impact is measured in terms of trampling of vegetation, subsequent erosion, and general trash runoff associated with various intensities of use.

Automobiles/Area/Day—A consideration of exhaust, oil, and gasoline as it contributes to urban runoff as well as general air pollution damaging to vegetation.

People/Paved Area/Day—A measure of those uses which retain the land in a natural or managed state, but which permit or require such heavy human intrusion that paving for human circulation would have less impact.



Land Use Impact Scoring and Grouping

Each of the nine indices was given a numerical score (a percentage of the total) relative to its contribution to the overall impact of a land use. This number value serves as a maximum for a range of scores, beginning at zero, which indicates the possible levels of impact a specific use may have. For example, the percentage clearance index is considered to be 10 percent of the total possible impact a land use can have on a site; thus it has a maximum score of 10. This maximum score can only be reached if the total site is cleared (100 percent). If only half the site is cleared (50 percent), a score of only five is possible with this particular index. This was done for all nine indices for each of the specific land uses analyzed. In all cases, the data used was based on typical design and construction standards for that particular use. The scores for each index were then added together to get a total impact score for each specific land use, with the larger numbers signifying a greater impact. Land uses were then ranked according to their total impact score based upon natural breaks and clustering; specific uses were then divided into rank order groups.

Results of the Land Use Impact Analysis

Recreation land uses were distributed rather evenly over the complete impact range, with several uses scoring high in overall impact. While recreation has a rather low impact on the land with regard to site alteration, it frequently has a rather severe impact in terms of human intrusion. It can be concluded that many recreational uses are not suitable when preservation of the natural quality of the land is the primary objective.

Housing uses tended to cluster toward the middle of the scale, with lower density housing generally having less impact. The human intrusion factor was generally low for all housing types, but site alteration indices were relatively high due to the amount of paving and clearing required.

Special uses were found toward the higher ends of the scale. This is indicative of their inherent high density and intensity of use which result in high levels of site alteration as well as human intrusion.

Use of the Land Use Impact Analysis

The land use impact groups were correlated with the land vulnerability maps in developing the land use plan for the Corridor.

The impact of various recreational uses on the landscape was considered in designating specific uses for the tracts of land recommended for public acquisition.

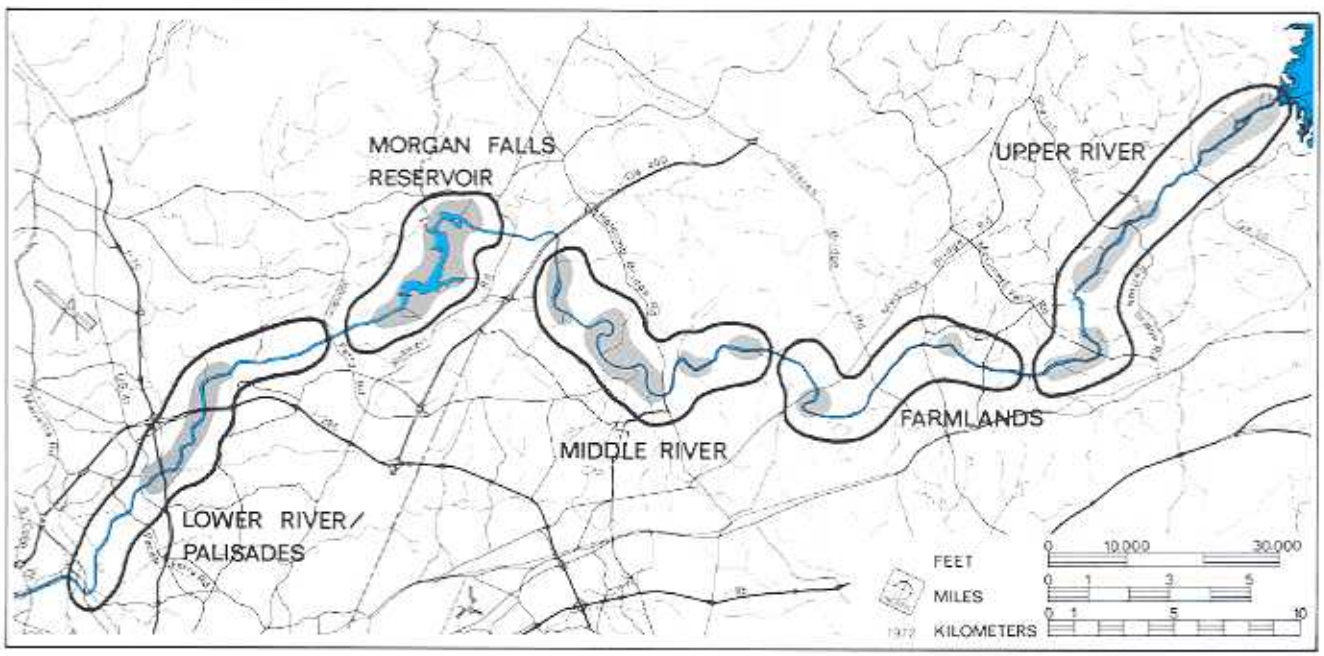
This analysis was also utilized to determine the development standards discussed in the implementation section of this report, which are recommended as guidelines for site planning and site design review within the Corridor.

score	housing	recreation	other
87			neighborhood commercial 2
86			neighborhood commercial 1
85		amusement parks	
83			regional commercial
82			community commercial 1
			community commercial 2
76			PUD community core
73		high intensity picnic	
65		community open space	
61			office park 2 (40% cov)
59		standard zoo	light industry 2
58	multi-family highrise		
57	multi-family highrise with parking structure		general institution 1
54			office park 1 (30% cov)
52	multi-family medium density	stadium	
49	multi-family with parking structure	medium intensity picnic	
47	mobile home park	boat ramp access	light industrial park
46	multi-family garden apartment		
44	multi-family cluster		church
43	single-family attached		high school middle school
42		play field	lower school
41	¼ acre lot single-family		
40		high intensity camping	
39		group camping (tent)	
36	single family cluster		
35	½ acre lot single-family		
31		natural zoo	
29	1 acre lot single-family	medium intensity camping	
28		18 hole golf course	
24	2 acre lot single-family	low intensity picnic	
20		low intensity camping	
18		canoe access	
16		hiking/short trail (nature study)	
14		primitive camping	
12		hiking/long trail backpacking	
10		fishing access	
2		nature preserve	
1		hunting	

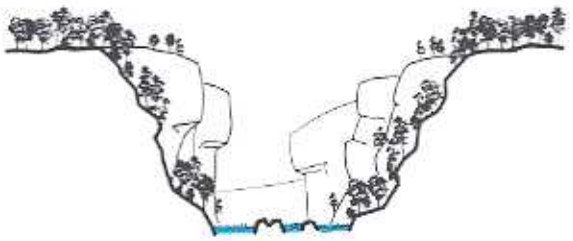
VISUAL AND CULTURAL FEATURES SURVEY

Although not a part of the vulnerability analysis, a visual survey was conducted throughout the Corridor in order to identify unique scenic or natural areas and other areas, such as archeological sites, that have cultural or historical significance. Those identified and so designated have been dealt with in two different ways in developing the Corridor plan and recommendations. Some areas were included as part of the recommended public acquisition program. Those that will remain in private hands were incorporated into the Voluntary Protection Zone, which is discussed in greater detail in the implementation section of this report.

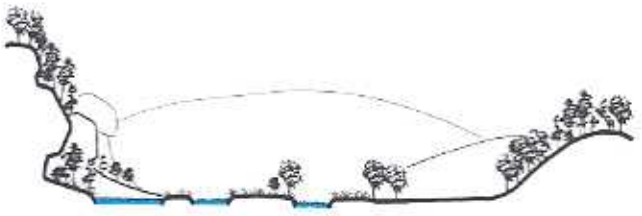
The visual survey attempted to categorize and illustrate the general land formations found through the length of the River's visual Corridor. These areas were mapped separately for analysis and then considered along with vulnerability and man-made features in synthesizing the Corridor plan. The specific contribution of the visual survey was in delineating physical subareas which are consistent internally, yet are significantly different from the other subareas. These visual subareas suggested constraints and opportunities in developing the land use part of the plan. Five visual subsystems were interpreted and delineated.



Lower River/Palisades The most dramatic area of the River Corridor. Steep slopes and ridges with many cliffs and rock outcroppings dominate. The River is very disturbed and fast flowing in this area, with shoals, rapids and white water evident throughout. There are very few outward vistas. Vegetation is generally thick with many climax species extant, especially on the north slopes.



Morgan Falls Reservoir A scenically rich and balanced area which includes a great variety of natural features, wildlife, and vegetation. The water is very calm and slow moving. Marshes and small islands accented by occasional cliffs and rock outcroppings abound. The remaining slopes are moderately steep. This is possibly the most contained and unified visual subarea within the River Corridor.



Middle River An area unique for its shoals and white water. The north slopes are steep and lush with vegetation. Flatter lands and fields, generally with wide flood plains, are found across the River. The remaining slopes are mild to moderate. There is constant change within this area. It is scenically rich.

Farmlands Flat fields and old farmlands lying adjacent to the River characterize this general area. The flood plain is rather wide and the few slopes that do exist are gentle with occasional areas of unique and scenic vegetation. The water is calm and the River is either straight or gently curving as it makes its way through this area.

Upper River This area is distinguished by rolling hills and ridges interspersed with rich valleys, ravines and flowering fields. Slopes are generally mild although occasional moderate to steep areas are found. The vegetation varies widely and includes some unique species. The water is relatively calm.

A Plan For The Corridor

This plan is intended to be a flexible, working tool to achieve the goals outlined earlier in this report. In addition, the manner in which the plan was developed and is presented reflects the basic assumptions behind the study.

There are provisions for lands for private development, lands for recreation, and lands for permanent open space. The plan is detailed in a way that gives clear guidance to local governments but allows the final decision as to exact land uses to remain at the city and county level.

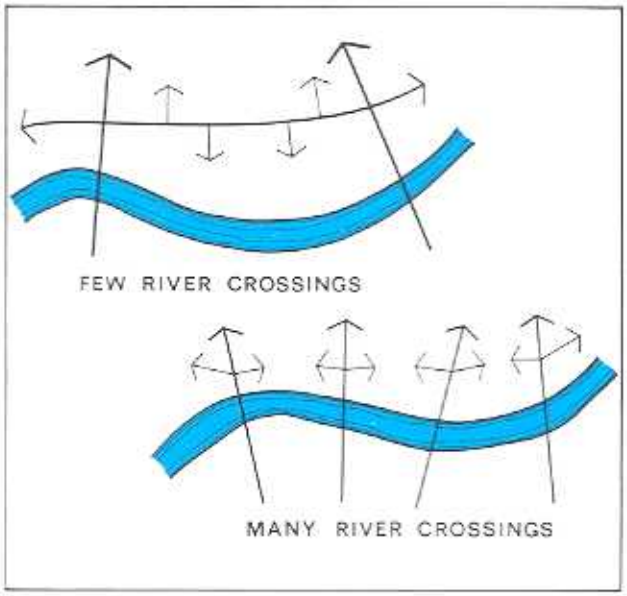
The plan is divided into two broad areas of responsibility and ownership: public and private. The public element deals with acquisition of parklands and provision of water, sewerage, and transportation facilities necessary to support public and private development. The private sector deals with categories of land uses appropriate to landscape, existing development patterns, utility systems, and growth patterns. Both elements deal only with those factors that are critical to wise use of the River Corridor. Supporting utilities are discussed in the context of existing and future regional functional plans.

All proposed uses, both public and private, are in accordance with the land vulnerability analysis conducted in the Corridor by the Atlanta Regional Commission. In order to realize maximum protection of the River, any development should be sited in accordance with this analysis. How something is done will be just as important as what is done.

PUBLIC ELEMENT

Highway Crossings

There are no new points proposed for River crossings at this time. Additional crossings should be minimized and constructed only if they are included in the regional transportation plan. Replacement of existing crossings should occur only within the regional framework.

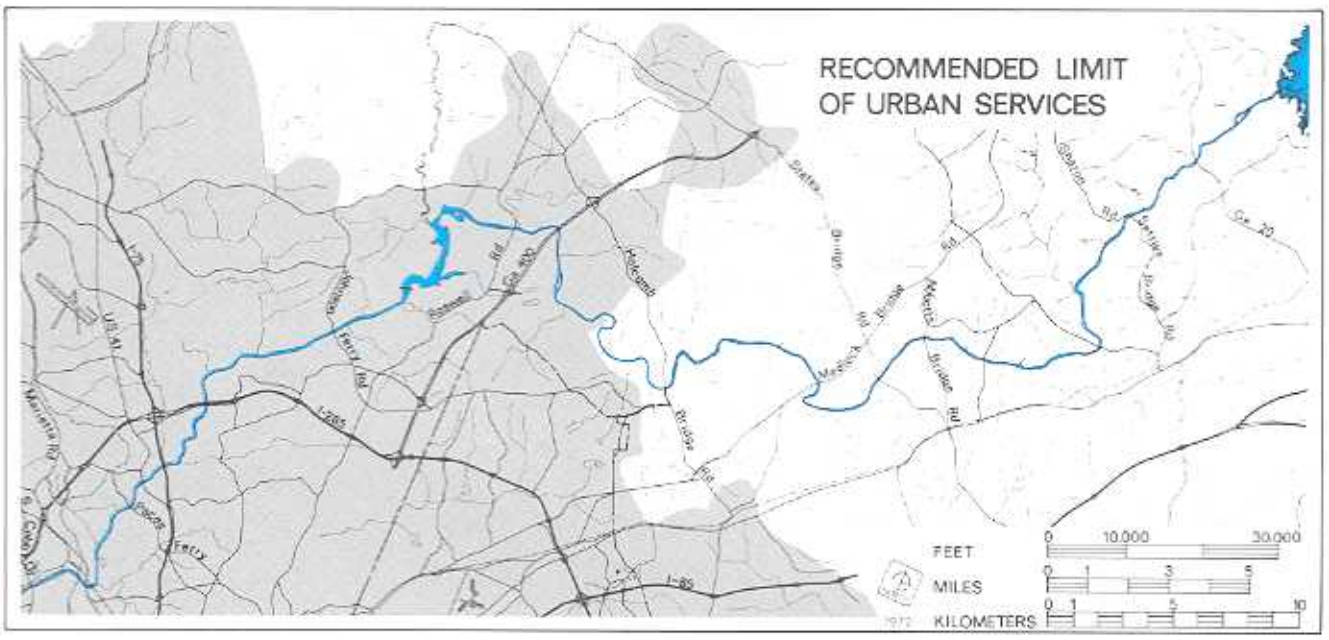


Water and Sewerage

These utilities should be provided in accordance with regional water and sewer plans, and small package treatment plants should be discouraged.

At present public sewer service is not proposed any farther upriver than the Ball Mill Creek Basin in DeKalb and Fulton Counties. This is in accordance with areas identified for urban growth in existing regional plans. As additional growth areas are identified in future regional plans, this Corridor plan should be amended to reflect these changes.

Any utility construction proposed should be carefully assessed to insure against physical and visual damage to the landscape. Areas of high scenic or historic value should not be permanently scarred.



Lands for Recreation and Open Space

The plan recommends public purchase and appropriate development of approximately 6,000 acres of parkland and open space. These sites range from islands of less than one acre to a major park containing almost 2,200 acres and stretching six miles along the River in Gwinnett and Forsyth Counties.

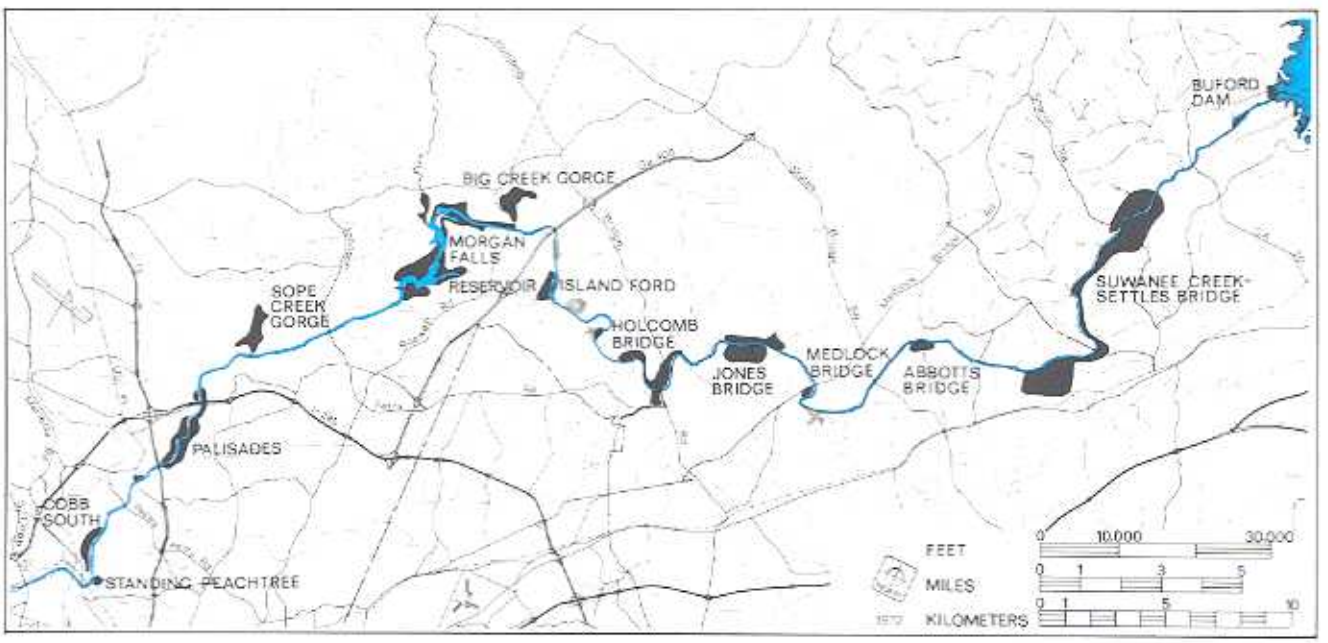
The areas proposed for public ownership and use will provide access to the River for fishing and floating, sites for hiking and picnicking, and areas for educational purposes. Land acquired adjacent to the River should be used only for river related recreation. Any other type of development should be placed away from the River so as to not preempt valuable shoreland. The following sections describe the features, approximate area, and proposed function for each of the sites identified for public acquisition. Suggested priorities reflect judgements on the scenic, historic, or recreational importance of the sites and the relative danger of destruction or loss. This classification (high, moderate, and low) is primarily related to recommended timing of acquisition.

Islands The 48-mile study area includes many islands from small vegetated outcrops of less than one acre to Bowman's Island, just below Buford Dam, containing almost 25 acres. These islands are fragile features on the riverscape, and all, with the exception of Bowman's Island, are subject to flooding. Construction or other human intrusion could destroy the vegetation cover and floodwaters could wash away an island. No development should take place on any island, although Bowman's Island might be considered for some very light recreation activity since it is above flood level. The islands are classified as of moderate priority.

Standing Peachtree Area The City of Atlanta owns approximately 50 acres north of Peachtree Creek on the east bank of the River. This area should provide limited neighborhood recreation facilities, a place for floaters to take out canoes and tubes, and possible educational programs in connection with the Atlanta Water Intake and related facilities. The low acquisition classification reflects the fact that park development is the primary responsibility at this site.

Cobb South This general location should be developed for a community park of approximately 160 acres. It should function as a river take-out point and serve residents in this area of Cobb County with such facilities as play fields, tennis courts, swimming pools, and picnic areas. Acquisition classification is moderate.

Palisades Area This is the proposed Chattahoochee River State Park and additional land on the Cobb County side of the Palisades. It is probably the most scenic stretch of the Corridor. The 500-acre complex is suitable for river put-in and take-



out facilities, trails, and other development designed for limited day-time activities. Acquisition in this area is of high priority.

Sope Creek Gorge Approximately 160 acres along this creek as it flows between Paper Mill Road and the River should be acquired to preserve the paper mill factory ruins and provide a permanent natural setting for this stretch of white water. Development should include only those facilities appropriate to historical or educational sites. Acquisition should receive high priority.

Morgan Falls Dam and its reservoir This location should be developed as one of the major mixed-use projects on the River. The 1,100 acres lying in both Cobb and Fulton Counties contain land, access, and public utilities suitable for intensive water-oriented development on the north side of this lake near the City of Roswell. Land in Cobb County adjacent to the reservoir should be developed as another river-oriented community park. The marshes in the reservoir should be left in an undisturbed wildlife state, and use of power boats should be forbidden or strictly limited. This recreation-open space complex should receive high priority.

Big Creek Gorge This is a twisting, scenic section of Big Creek along the first several thousand feet upstream from the Chattahoochee. As with the Sope Creek Gorge, this 200-acre tract would need only limited development for recreation use. This site is classified in the moderate priority category.

Island Ford Area The 210 acres covered in this recommendation include one of the most scenic areas of the River. This area is suitable for fishing access and development of nature study areas similar to those recommended for the Palisades and no intensive development is proposed. The portion of this area presently operated as a campground does not need to be acquired as long as the present use continues. This critical area is of high acquisition priority.

Holcomb Bridge Area This location is suitable for development of river access and a community park complex to serve Fulton, DeKalb, and Gwinnett Counties. Acquisition of approximately 400 acres in this area should also provide a northern terminus for hiking, biking, and horse trails from the Morgan Falls Dam area upstream on the north side of the Chattahoochee. This scenic link would make use of existing or expanded road right-of-ways. Moderate acquisition priority is recommended.

Jones Bridge Area These 450 acres are highly scenic, and are enjoying a great deal of recreation use. The north side of the River should serve as fishing access; the south side could provide a community park on the River for southwestern Gwinnett County. This area is recommended as a high priority site.

Medlock Bridge Area Acquisition of only approximately 35 acres at this Gwinnett County crossing would provide for river access and preservation of a scenic riverbend. A low priority is attached to this site.

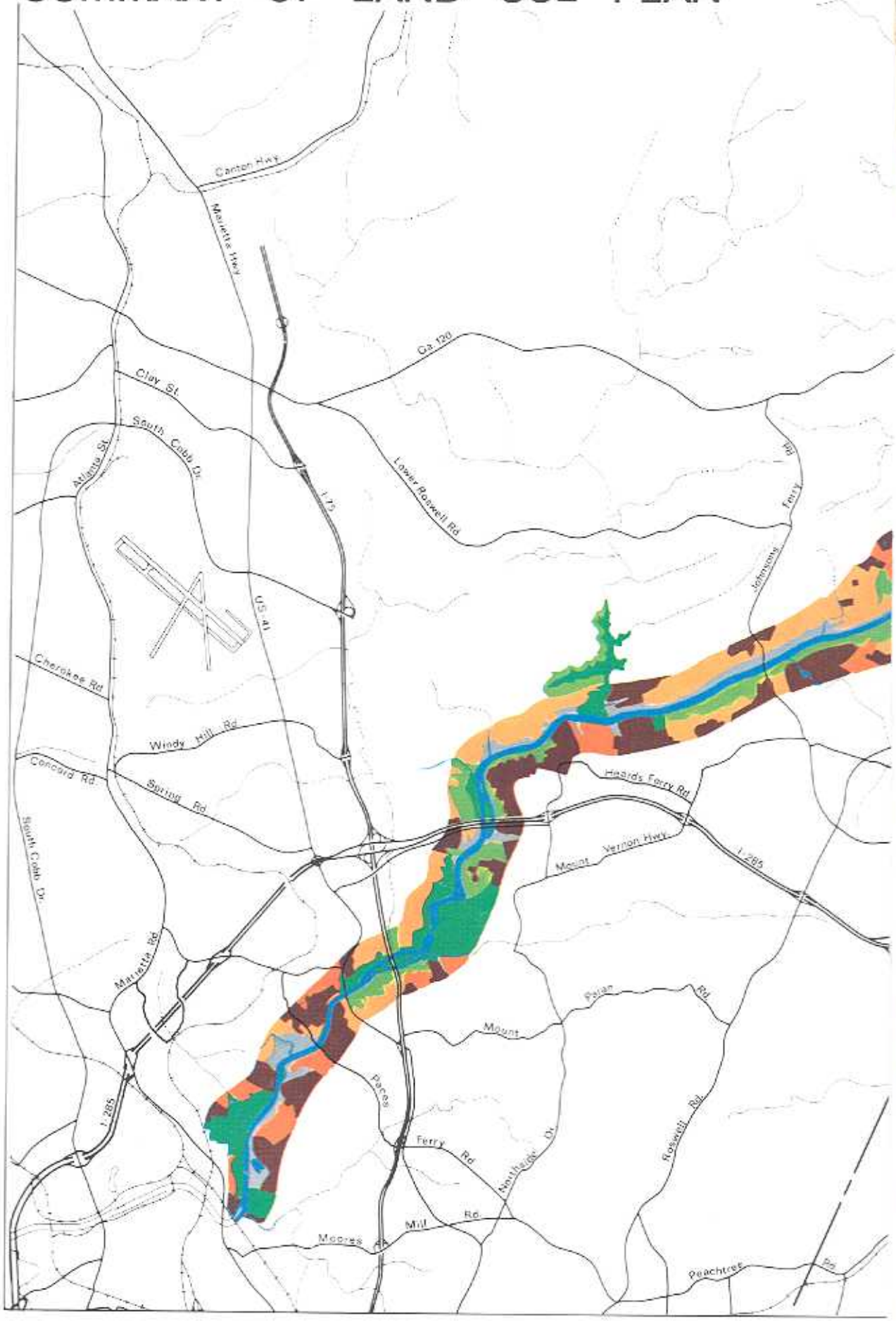
Abbott's Bridge Area The Duluth area of Gwinnett County should be served by a community park on the River. The proposed 140-acre tract would also provide river access. A low priority is recommended for this site.

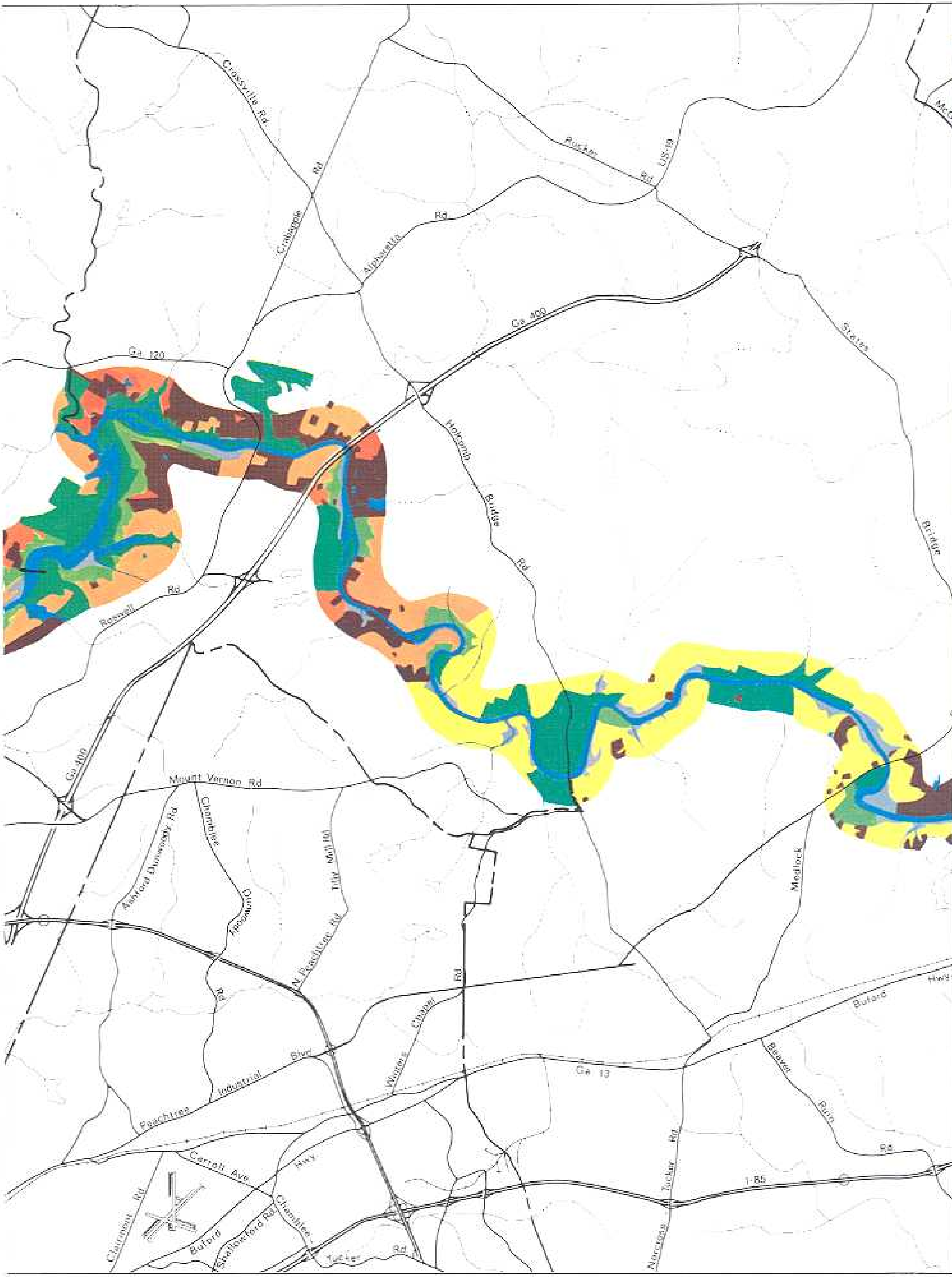
Suwanee Creek to Settle's Bridge This is the largest land acquisition proposed along the River. The 2,200 acres located where Forsyth and Gwinnett Counties join provide an opportunity to develop something unique for not only Atlanta but also the Southeast. The southern portion of this area contains a large marsh along Suwanee Creek which could serve as a centerpiece for a nature study center. Preservation of this marsh would also improve the water quality of Suwanee Creek before it empties into the Chattahoochee. Relocation of Peachtree Industrial Boulevard from the presently proposed alignment eastward to the railroad tracks is necessary in order to prevent damage to the marshes. The entire area is varied enough to meet many resource based recreation needs: it is the only area along the River recommended for overnight use. This proposed acquisition is classified as of moderate priority.

Buford Dam The public lands around the base of the dam should be used to provide access to the upper end of the study area. No additional acquisition is proposed at this location and a low priority is recommended.

Summary
A Natural Framework For Planning and A Plan For The Corridor

SUMMARY OF LAND USE PLAN

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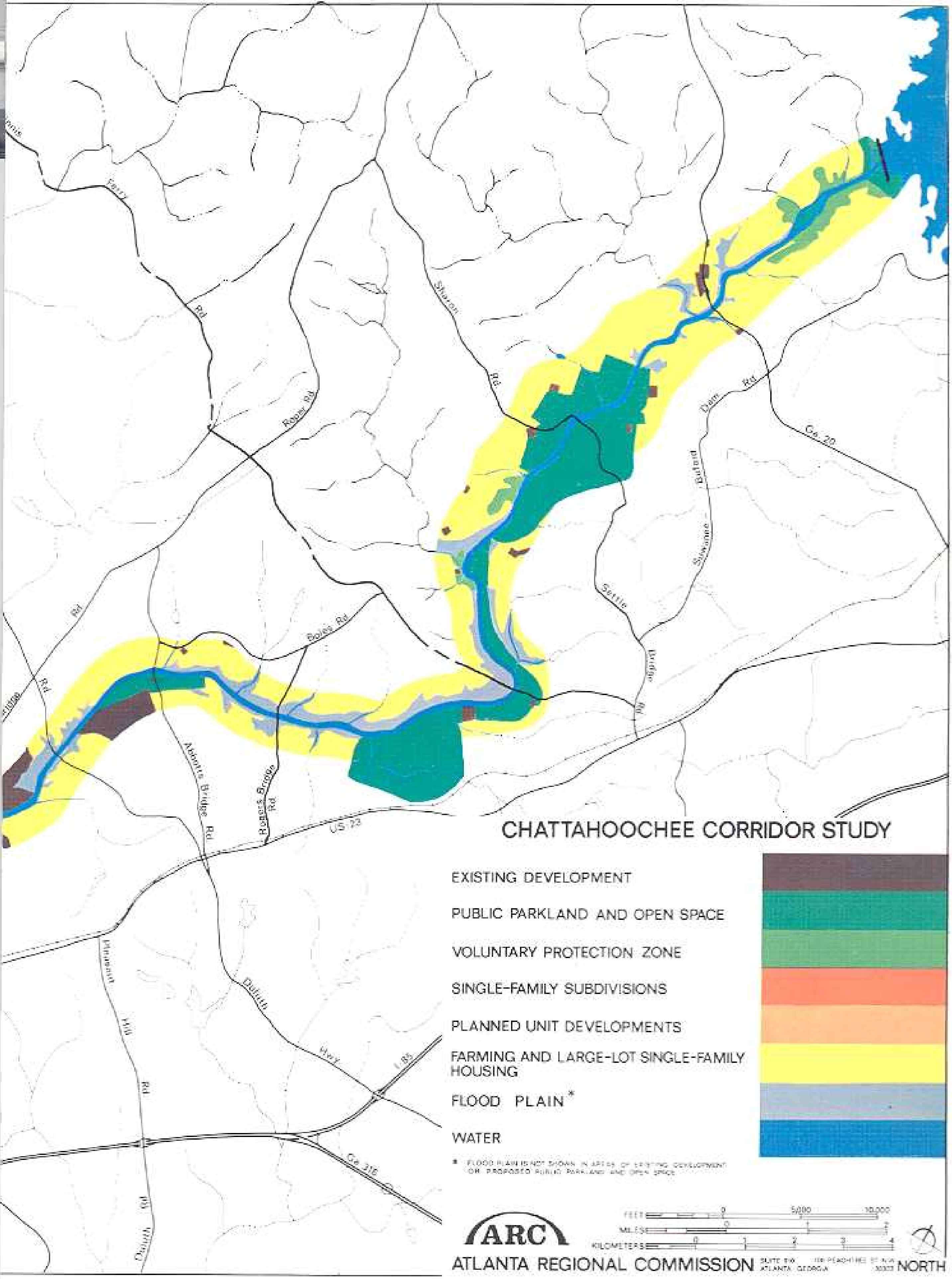
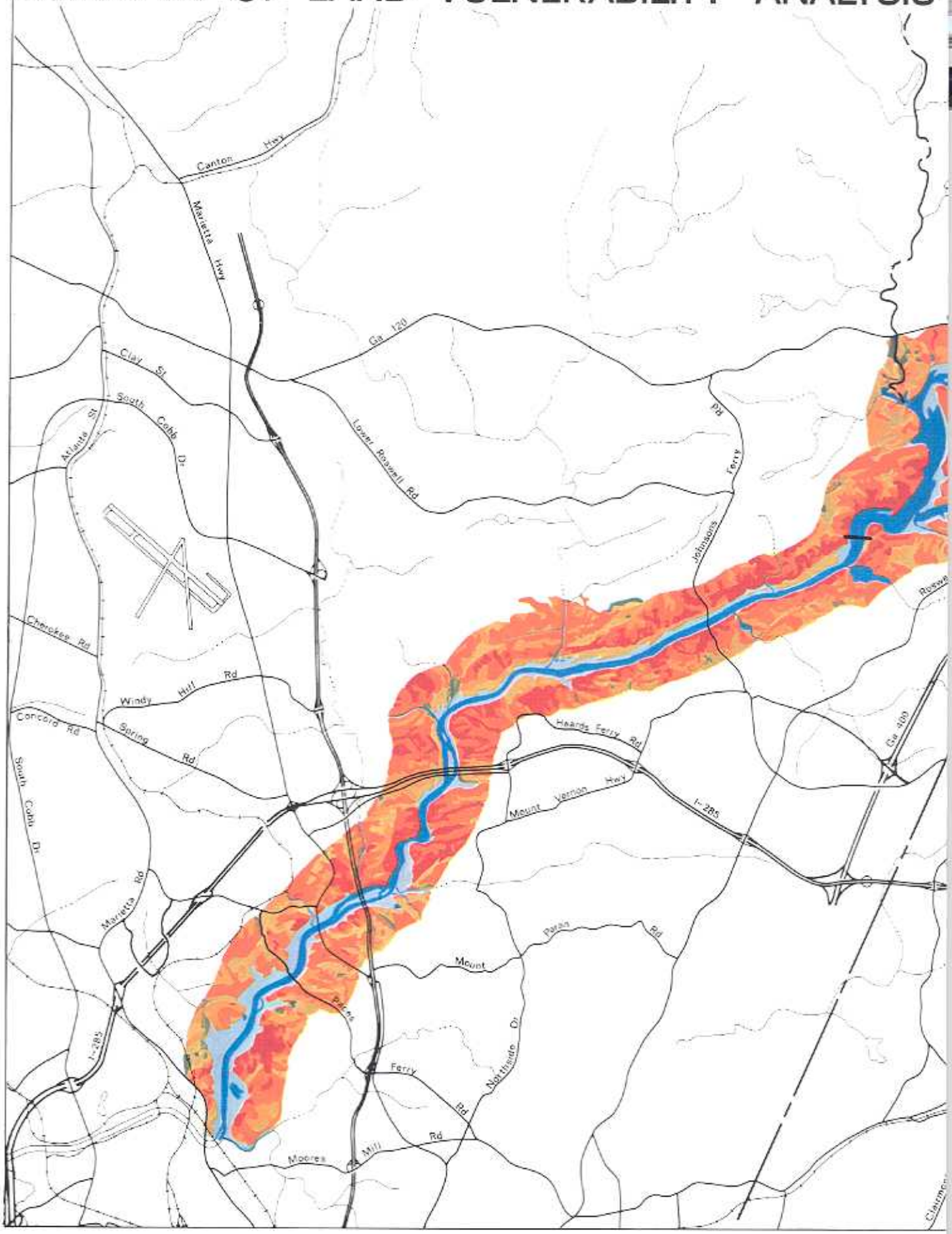
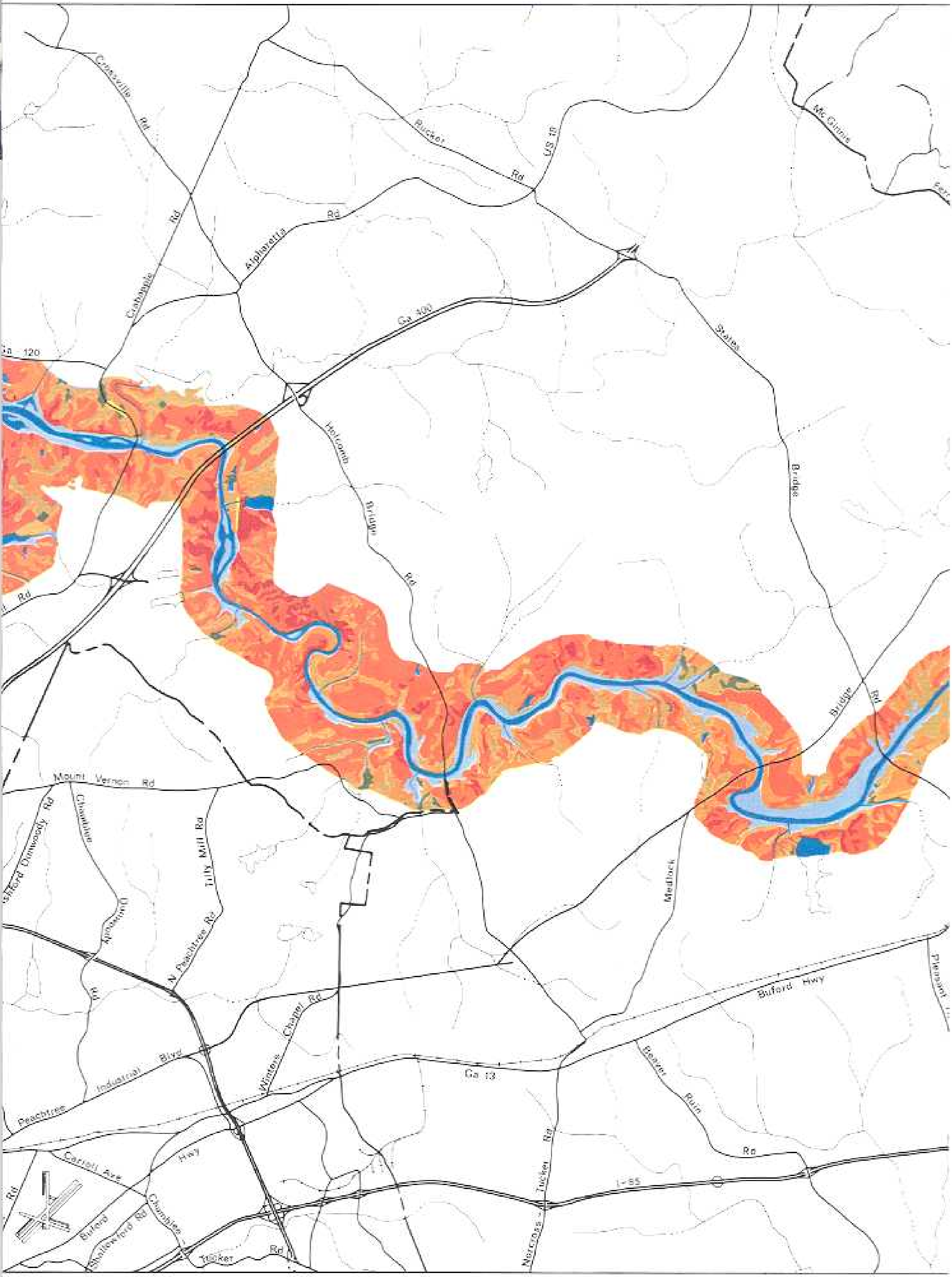
Rd
US 19
Rd
Crabapple
Alpharetta
Rd
Ga 400
States
Bridge
Ga 120
Holcomb
Bridge
Rd
Roswell
Rd
Ga 400
Mount Vernon Rd
Chamblee
Ashford Dunwoody Rd
Dunwoody
Tilly Mill Rd
N. Peachtree Rd
Medlock
Rd
Rd
Chapel
Winters
Buford
Hwy
Beaver
Ruin
Rd
Peachtree
Industrial
Blvd
Ga 13
Carroll Ave
Hwy
Clairmont Rd
Buford
Shallowford Rd
Chamblee
Tucker
Rd
Tucker
Rd
Norcross
I-85


CHATTAHOOCHEE CORRIDOR STUDY
EXISTING DEVELOPMENT
PUBLIC PARKLAND AND OPEN SPACE
VOLUNTARY PROTECTION ZONE
SINGLE-FAMILY SUBDIVISIONS
PLANNED UNIT DEVELOPMENTS
FARMING AND LARGE-LOT SINGLE-FAMILY HOUSING
FLOOD PLAIN *
WATER
* FLOOD PLAIN IS NOT SHOWN IN AREAS OF EXISTING DEVELOPMENT OR PROPOSED PUBLIC PARKLAND AND OPEN SPACE
FEET 0 5,000 10,000
MILES 0 1 2
KILOMETERS 0 1 2 3 4
ARC
ATLANTA REGIONAL COMMISSION
NORTH
Ferry
Rd
Rogers Rd
Sharon
Rd
Dam
Rd
Ga 20
Buford
Suwanee
Settle
Bridge
Rd
Boles Rd
Rd
Rd
Atlanta Bridge Rd
Rogers Bridge Rd
US 23
Duluth
Hwy
I-85
Ga 316
Pleasant
Hill
Rd
Duluth
Rd

SUMMARY OF LAND VULNERABILITY ANALYSIS

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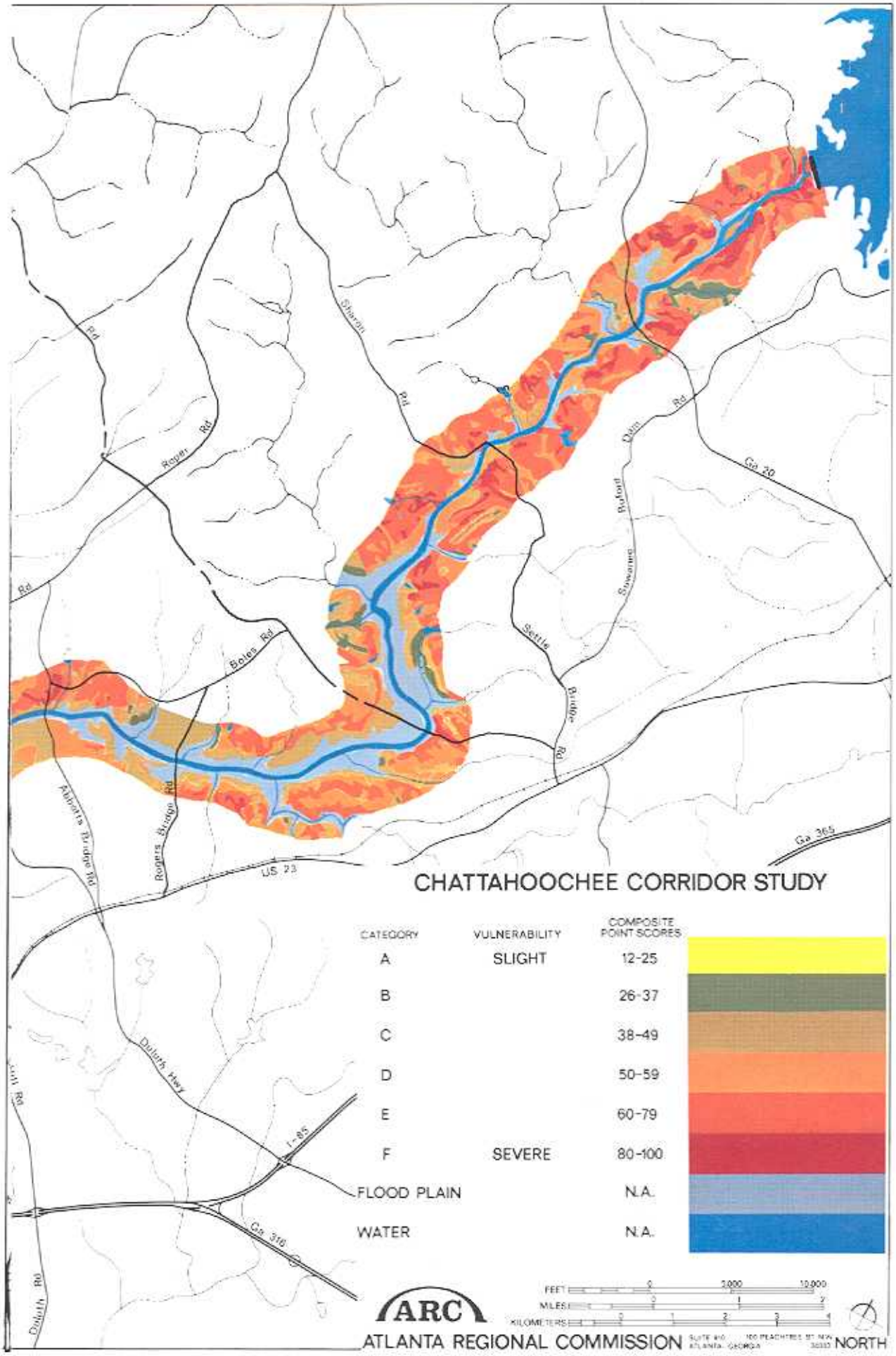
Rucker Rd
US 19
Mc Ginnis
Alpharetta Rd
Crabapple Rd
Ga 400
Ga 120
States Bridge
Holcomb Bridge Rd
Bridge Rd
Mount Vernon Rd
Chamblee Dunwoody Rd
Tilly Mill Rd
N Peachtree Rd
Medlock
Pleasant
Buford Hwy
Winters Chapel Rd
Industrial Blvd
Peachtree
Ga 13
Beaver Ruin Rd
Carroll Ave
Hwy
I-85
Norcross - Tucker Rd
Buford
Shallowford Rd
Chamblee
Tucker Rd


Roper Rd
Sharon Rd
Dunn Rd
Ga 20
Buford
Suwanee
Settle
Bridge Rd
Boles Rd
Rogers Bridge Rd
Abbotts Bridge Rd
US 23
Ga 365
Duluth Hwy
I-85
Ga 316
Duluth Rd
Rd
CHATTAHOOCHEE CORRIDOR STUDY
CATEGORY
VULNERABILITY
COMPOSITE POINT SCORES
A
SLIGHT
12-25
B
26-37
C
38-49
D
50-59
E
60-79
F
SEVERE
80-100
FLOOD PLAIN
N.A.
WATER
N.A.
FEET
MILES
KILOMETERS
ARC
ATLANTA REGIONAL COMMISSION
NORTH

PRIVATE ELEMENT

The substantial portion of the Corridor, over 75 percent, is identified for private ownership and use. Proposed uses include:

- More diverse and intense activity in the areas between (1) U.S. 41 and Interstate 285; and (2) Roswell Road and Georgia 400.
- Single-family subdivisions and planned unit development in all other areas within the limits of public sewerage.
- Farming and other rural activity in the upper stretches of the Corridor.

Planned Unit Development or Community Unit Plan

The planned unit development is potentially the single most important tool to realize wise private development of the Corridor. Traditional zoning was designed to regulate development on a lot-by-lot basis, and protect owners of one lot from damage sustained by misuse of an adjoining lot. It also insists on rigid requirements, such as setbacks and regular yard dimensions, which usually are irrelevant to Atlanta's topography. In fact, zoning has sometimes worked to the detriment of good site development.

Planned unit developments (PUD's) or community unit plans (CUP's) are refinements of the zoning concept. Under this process a large tract of land is treated as a unit.

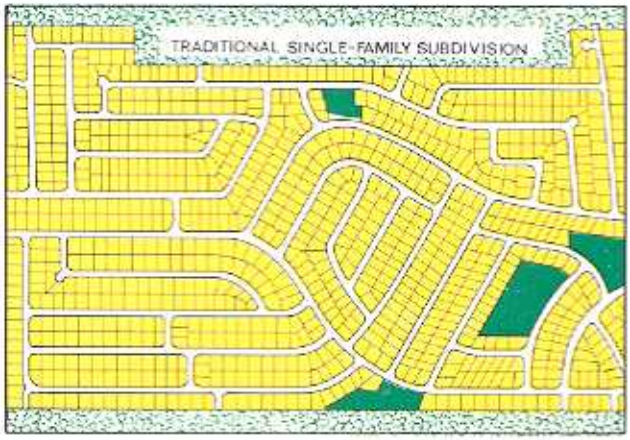
Land use and density are regulated for the entire parcel rather than for any single part of it. Planned unit development can encompass any or all of the following concepts:

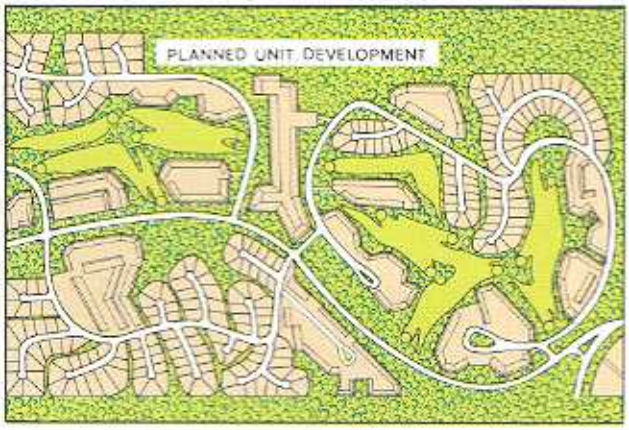
Density transfer systems These are the most elementary forms of the planned unit development technique. Minimum lot sizes and yard requirements usually are reduced, but permitted building types and overall densities do not change. This approach leads to the clustering technique with its emphasis on common open space. It is an included feature of the following three approaches:

Mixed-residential types, no density increase These forms of density transfer allow the developer some flexibility in deciding upon a mix of single-family and multi-family housing types.

Mixed-residential types, density increases allowed These permit both a variety of residential types and an increase in overall density of the area to be developed. Density increase features can either be tied to specified and quantifiable conditions, such as the amount of open space, or can be tied to a bonus system which considers such judgemental features as site patterns, design and landscaping, but which may be open to legal challenge.

Mixed-use projects These cover the widest range of possibilities up to and including entire planned new communities or even new towns. This approach includes commercial or even industrial uses. Residential density increases may or may not be allowed.





The planned unit development is an extension of the condominium concept. Some areas within the tract are privately owned while others are jointly or commonly owned.

The PUD concept imposes greater responsibility on the review process and the personnel involved; however, a well-designed planned unit development benefits the developer, the residents, and the municipality or county. There are savings in construction; natural amenities are preserved; public service costs are reduced. In the Corridor, an additional benefit would be a valid response to the land vulnerability analysis. Structures and activities could be clustered in areas more suitable for development and the more critical areas could be left untouched or in low density developments.

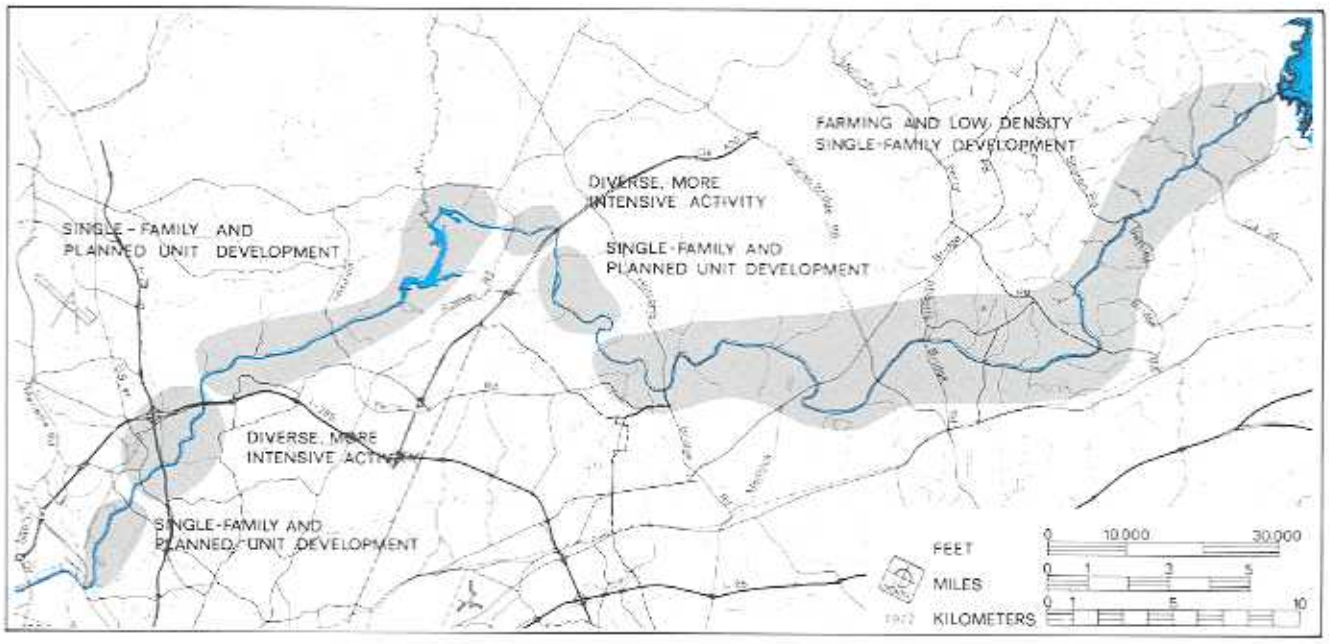
The Corridor should not be developed in isolation from the rest of the region. Many planned unit developments proposed for the study area will extend outside the Corridor. This is reasonable. In this case, the PUD should be treated as a total package, with special attention given to the Corridor section to take advantage of the additional data available to aid design and review.

U. S. 41/I-75/I-285

The triangle formed by these highways and the River is highly accessible and has a full range of urban services. Existing development covers the spectrum from expensive, large-lot homes to multi-family residential and office parks. Quality of development varies from excellent to poor without any direct correlation between quality and density. This plan supports existing patterns and recommends a mix of single-family subdivisions, office developments, multi-family projects, and mixed-use planned unit development.

Roswell Road/Georgia 400

The area bounded by these two highways is moderately accessible to work and shopping centers; a full range of urban services is developing. The north side of the River has some multi-family development, but is predominately single-family, while the south side is a mixture of commercial, multi-family and single-family activity. The plan recommends additional single-family developments for the north side of the River. The south side is suitable for multi-family and mixed-residential unit developments.



Other Urban Growth Areas

Single-family development is proposed for the City of Atlanta's portion of the Corridor not previously discussed. In Cobb County single-family subdivisions and mixed-residential planned unit developments are recommended. A similar pattern is suggested for Fulton County. This plan complements existing land use patterns, utility systems, and levels of accessibility.

Areas Lacking Urban Services

Large areas of northern Fulton County and the Corridor in Gwinnett and Forsyth Counties presently lack the full range of public services necessary to appropriately support high quality urban development. These areas are identified as rural in the current regional development plan. Existing development consists of agricultural activities, scattered subdivisions, and individual homes on large lots. A major portion of the area is forest land.

At this time, the Corridor plan proposes no significant development in this area. As in all other stretches of the River, any development that does take place should respond to the land vulnerability analysis and the urban services that are available.

Voluntary Protection Zone

Many areas along the River are of high scenic value. Some of these sites have been proposed for public parks. However, there are some locations which have historic significance or features, such as bluffs or flowering vegetation, where no public acquisition and access are proposed. Several of these zones have been identified in the plan to point them out to the architect, site planner, and developer so that the construction of a subdivision or planned unit development can take these areas into account.

There is a beautiful waterfall in Fulton County near the Chattahoochee in the vicinity of River North Subdivision. It does not involve much land but is important because it is unique in the River Corridor. River North Subdivision is developed and the waterfall lies within one of the single-family lots. Public access would be undesirable. However, this scenic feature should be left untouched; and if the Voluntary Protection Zone is not a viable technique, acquisition will be desirable.

Implementing The Plan

The first part of this study presented a land analysis and a land use plan for the Corridor. The adoption of these alone, however, will not insure that the goals of the study will be met. The implementation plan is designed to insure development of such quality that it enhances, rather than detracts, from the natural values of the River and adjacent lands.

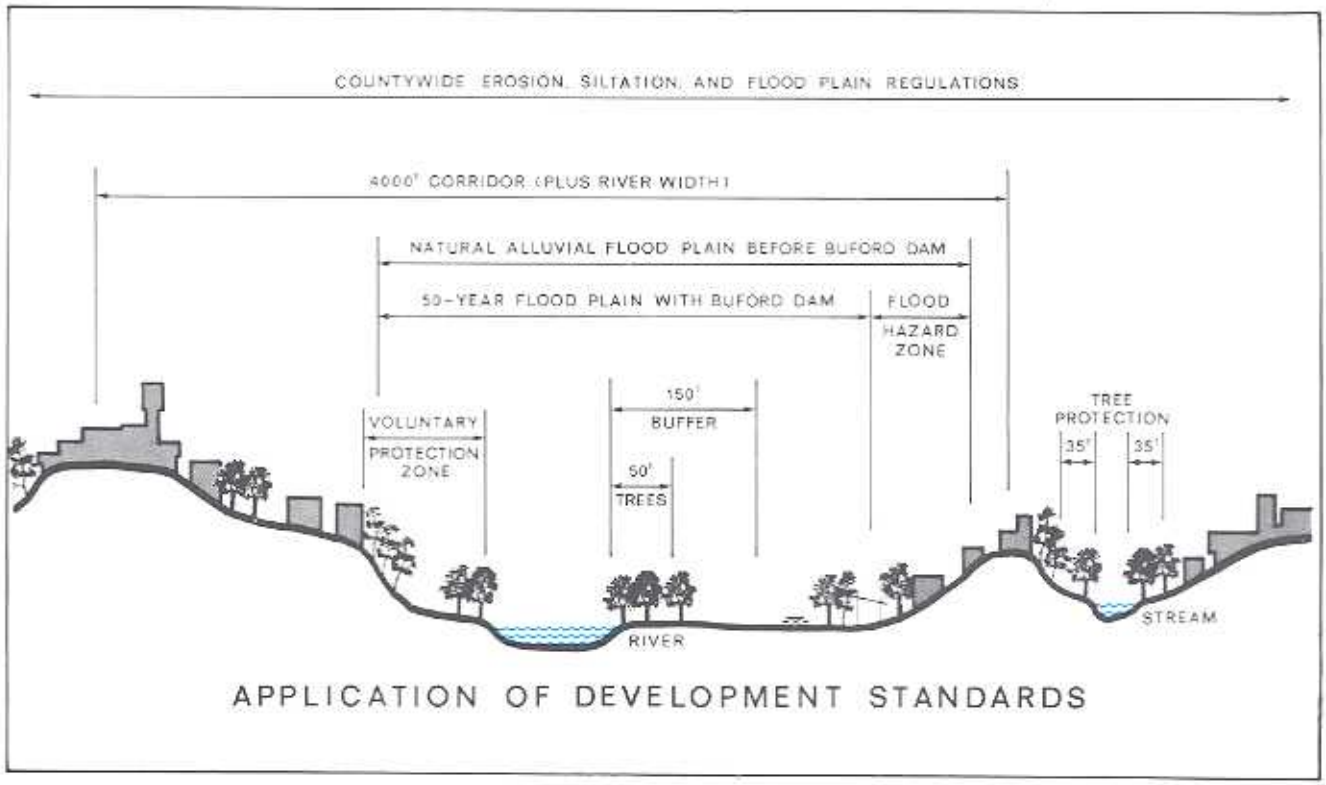
In developing the plan it was recognized and accepted that much private development will take place within the Corridor. It is not the purpose of the recommended controls to prevent this development from occurring, but rather to minimize adverse impacts it might have.

The implementation plan consists of three major sections:

Principles and standards recommended for countywide adoption Included in this section are soil erosion and sediment control regulations, and regulations for controlling development in the flood plain.

Principles and standards recommended for adoption and enforcement only within the 4,000-foot Chattahoochee River Corridor Also included in this section are general development standards; a proposed River Buffer Zone; a proposed Flood Hazard Zone; Standards for Planned Unit Developments (PUD's or CUP's); and a proposed Voluntary Protection Zone. Many recommendations for the River Corridor go beyond those for countywide adoption. In cases where the two conflict, the Corridor recommendation should apply.

A recommended public acquisition program Appropriate roles of public agencies and private organizations are discussed in this section.



APPLICATION OF DEVELOPMENT STANDARDS

COUNTYWIDE RECOMMENDATIONS

Many of the recommended principles and standards will be ineffective if applied only to a 4,000-foot Corridor. In any discussion of natural features, 2,000 feet on either side of the River must be acknowledged as a somewhat arbitrary boundary, although many factors considered become more critical as proximity to the River increases. Mainly located outside the study Corridor, the many streams and creeks tributary to the Chattahoochee present just as great a water quality problem as the Chattahoochee itself. Much of the organic pollutants and eroded soil entering them will eventually make their way into the River. Consequently, it is strongly recommended that the ordinances and regulations developed to provide for erosion and siltation control and to regulate development in the flood plain be adopted on a countywide basis.

It is not the intention of the Atlanta Regional Commission to present model ordinances for local governments to adopt. Rather, the Commission recommends for adoption principles, standards, and methods of implementation which will form the core of such ordinances and provide the base for effective control and regulation. Detailed administrative, review, inspection and enforcement procedures and more detailed specifications should properly be left to local governments to develop in accordance with their own capabilities and organizational structures. The Atlanta Regional Commission is prepared to provide assistance in developing these programs.

Soil Erosion and Sediment Control

Sediment, which is the product of eroded soil being washed into rivers and streams, is a major pollutant of our waterways. Damages resulting from soil erosion can occur in a number of ways: (1) Erosion causes considerable damage to the construction site itself and to any area where it is deposited. It can wash out roads, slopes, fills and embankments and clog storm sewers, drains and creeks. These damages necessitate costly repairs. (2) Sediment lowers the quality of water for municipal and industrial uses, causing corresponding increases in water treatment costs. It also detracts from water's value for recreational use. (3) Sediment-filled streams lose esthetic value. (4) Sediment reduces channel capacity, resulting in flooding when the volume of runoff increases during heavy rains.

Efforts to control sediment pollution must be concerned not only with treatment of water already

affected by sediment, but more importantly, by controlling it at the source through preventive programs.

The amount of erosion that occurs is determined principally by the following factors: type of soil, slope, vegetative cover, intensity of rainfall, and the construction methods employed. Development of programs to meet this erosion problem is the responsibility of local governments. The Federal Government had been attempting to prosecute those discharging pollutants, including sediment, into the Chattahoochee under provisions of the Refuse Act of 1899. Recent U.S. District Court decisions, however, have declared the Chattahoochee River north of Peachtree Creek as non-navigable and therefore not subject to Federal enforcement. This decision delegates the entire responsibility to local governments. In order to meet this challenge, the following steps are recommended:

Formally recognize the need for erosion and siltation control.

- A resolution to this effect would be an official statement that erosion and sediment problems do exist, and would establish the position of the public interest in favor of erosion and sediment control. This, in effect, would form the justification for specific legislation to control erosion and sediment.

Adopt the following general principles:

- Plans for development should be fitted to topography, soils, and vegetative cover, to create the least erosion potential possible.
- When land is exposed during development, exposure should be kept to the shortest practical period of time.
- The smallest practical area of land should be exposed at any one time during development.
- Where the use of the land does not require removal of trees and other natural vegetation, these should be retained and protected.
- Where inadequate vegetation exists, adequate temporary or permanent vegetation should be established.
- Critical areas exposed during construction should be protected with temporary vegetation and/or mulching.
- The speed and flow of runoff water should be controlled and released safely to downstream areas.
- Sediment basins (debris basins, desilting basins, or silt traps) should be installed and maintained where needed to remove sediment from runoff waters from land undergoing development.
- Permanent protective vegetation should be installed as soon as possible during development.

All development plans and permits shall be reviewed for conformance with the above principles. Adopt the following standards:

- All cut and fill operations involving an area greater than 10,000 square feet shall require a grading permit.
- All development plans shall require proof that the soil is suitable for the intended development.
- All development plans shall include provisions for the control of sediment and runoff water during construction.
- All development plans shall show existing vegetation and proposed clearance patterns.
- Clearance permits shall be required when total clearance is to exceed 30 percent of the proposed development site or an area greater than two acres.
- Roots of remaining trees shall not be covered with more than six inches of fill. Precautionary methods shall be used to protect against root damage due to paving, site alteration and cut and fill operations.

Gwinnett County and the Upper Ocmulgee River Soil and Water Conservation District recently joined forces to develop a countywide soil erosion and sediment control ordinance. This exemplifies the type of cooperative effort needed, and could serve as a model for other governments in the region.

Regulation of Flood Plain Development

The natural function of a flood plain is to carry away excess water in times of floods. Failure to recognize this fact has often led to rapid and haphazard development with a consequent increase in flood hazards and damages.

Flooding can result in inconvenience, hardship, danger, and economic losses for those occupying the floodlands. It can also result in much greater public and private costs by causing disruption of utility and transportation services; increases in health and safety hazards; and damage to industries, businesses, residences and agricultural operations. These problems can be caused either indirectly by resultant flood conditions such as seepage, sanitary sewer or septic tank system backup, erosion, siltation, and water pollution, or directly, by inundation and by the force of surging flood waters.

Problems associated with flooding will increase as watershed areas continue to urbanize. As development occurs, the amount of water falling on impervious surfaces and runoff increases. Flood storage retention capacities do not generally exhibit corresponding increases, and frequently decrease as development is permitted to violate the flood plain.

Any water course, regardless of its present condition or past history, can become a threat to developments within its flood plain. Encroachments downstream can obstruct the flow of flood waters, and slopes of the watershed which are urbanized to an extensive degree produce increased runoff. In the Chattahoochee Basin south of Buford Dam, the maximum flood elevation has been reduced between 15 and 18 feet; however, the River has still reached flood stage at Vinings near Atlanta seven times since construction of the Dam. Most rivers overflow their channels every one and one-half to two years, but fortunately the more devastating floods occur at less frequent intervals. The 50-year flood (a flood which has a two percent possibility of occurring in any given year), for example, would inundate the flood plain of the Chattahoochee Corridor an average of six feet. Periodic flooding, therefore, remains a problem, especially in those areas that are experiencing increased urbanization.

It is costly to undertake public works programs for the protection of floodland development, difficult to remove or convert existing development, and unrealistic to assume that all future flood-vulnerable development would be discouraged on floodlands without direct action. The prohibition and regulation of flood-vulnerable uses under local police powers are therefore the most efficient, economical, and logical methods of preventing flood damage.

The objectives of local flood plain regulations should be to preserve the flood plains from encroachment of any nature which would increase the need for flood protection, raise the flood level, reduce flood storage or impede the movement of flood waters. To accomplish these objectives, the following steps are recommended:

Adopt the following principles:

- Flood plain storage should not be altered from its present state. This is necessary in order to protect adjacent lands and other upstream and downstream areas.
- Vegetation along all stream banks should be protected in order to preserve water quality and insure stream bank stabilization.
- Alteration of drainage channels should be prohibited except in those cases where it can be proved that the alteration has no effect on stream peak rate of flow or stream capacity.
- Structures susceptible to flood damage should not be permitted in the flood plain.
- Due to proximity of waterways, the levels of clearance and amounts of impervious surface permitted in flood plain areas should be controlled so as to not increase runoff or cause elevations in water temperature.

Adopt the following standards:

- Grading permits shall be required for all cut and fill operations in the flood plain.

- Cut and fill operations shall not be permitted if such operations would result in any net change in the surrounding natural flood elevation or impede the natural flow of flood waters at either the site itself or at adjacent or surrounding areas.

- To help insure bank stabilization, a protective band of uncleared vegetation, of 35-foot minimum width, shall be left on both banks of all flowing stream channels.

- Where the 100-year flood plain for any stream has not been established, it shall be the responsibility of the builder to furnish such elevations.

- Clearance permits shall be required for all tree-cutting operations in the flood plain.

- Clearance of vegetation shall be limited to 30 percent of hardwood trees greater than six-inch diameter and 60 percent of all other species.

- The maximum effective impervious surface shall be limited to 20 percent in the flood plain.

- The location, design, elevation, and construction of all public utilities and facilities, such as sewer, gas, electrical and water systems, and streets, shall be in such a manner so as to minimize or eliminate damage by flooding.

- Any use that conforms to the above principles shall be permitted in the flood plain. Examples of such uses are: agriculture; public and private parks and recreation facilities, with the exception of permanent buildings; fences; signs; roads and parking areas; public utilities, provided they permit the free flow of flood waters; and institutional and residential open space.

For many parts of the Alanta region, the best information currently available is for the 50-year flood plain. However, the U.S. Army Corps of Engineers is currently basing all studies on the 100-year flood plain, and this is the basis on which the above principles, standards, and methods of implementation should apply.

Fulton and Gwinnett Counties have adopted flood plain regulations as part of their zoning regulations. These have been followed as much as possible. Changes have been made only where additional standards and controls were thought necessary.

RIVER CORRIDOR RECOMMENDATIONS

The following principles, guidelines, standards and methods of implementation which pertain only to the 4,000-foot Chattahoochee Corridor are recommended for adoption:

General Development Standards

Adopt the following principles:

- Development should be fitted to the natural features of the site, including but not limited to: slope, soils, drainage, geology, vegetation and aspect.

- The location and intensity of development should be sited so as to minimize the negative effects of that development on water quality, both during and after construction. Major considerations concerning water quality should include: organic pollution from infiltration and surface runoff, erosion and sedimentation, and water temperature elevation.

Adopt the following standards:

- All proposed development plans shall be required to follow the land vulnerability analysis developed by the Atlanta Regional Commission; or

- Proposed development plans shall be required to include a like analysis in greater detail, or other evidence should be submitted showing that the planned development is in keeping with the principles outlined above.

- All public and private utilities including, but not limited to water supply, storm drainage, and sewer systems (including septic tanks), shall be designed and installed to meet the above general development standards and pertinent state health regulations.

River Buffer Zone

Preservation of vegetation along the River is important both for water quality and scenic reasons.

Adopt the following principles:

- Vegetation should be preserved along the banks of the River in order to prevent urban runoff, preserve water quality, and insure river bank stabilization.

- An undeveloped buffer zone should be established in order to protect and enhance the visual quality of the River.

Adopt the following standards:

- Vegetation shall be left in its natural state for 50 feet on either side of the river banks except for footpaths and designated public access points.

- Impervious surfaces and structures shall not be permitted for a distance of 150 feet on either side of the river banks except for footpaths and designated public access points.

Flood Hazard Zones

The Flood Hazard Zone or bottomland is comprised of those lands that were located in the pre-Buford Dam 50-year flood plain but which are now located outside the present 50-year flood plain. The soils of these areas are alluvial in nature and because they are flat are generally suitable for development. Since they are flat, are located adjacent to the existing flood plain, and are in proximity to the River, they must be dealt with separately from those areas of similar suitability, but which are generally located at a greater distance from the River. There are two reasons for this. Runoff increases greatly with proximity to the River and the flood plain boundary is not a stationary line, but one that changes continuously as development occurs and runoff increases. In addition, the 50-year flood plain was used in the Corridor analysis only because it was the best available information; it is anticipated that when the Corps of Engineers has completed its current survey many of the lands in the Flood Hazard Zone will be located in the new 100-year flood plain. Therefore, in order to anticipate and circumvent future problems in these areas, the following recommendations are made.

Adopt the following general principle:

- Additional flood protection and flood storage capacity should be provided in the Flood Hazard Zone in the event of alteration of the designated 50-year flood plain.

Adopt the following standards:

- The main floor levels of all inhabited structures in the Floor Hazard Zone shall be at an elevation of not less than two feet above the adjacent flood plain elevation.

- Cut and fill operations shall not cause any net change in the surrounding natural flood elevation or impede the natural flow of flood waters at either the site itself or any adjacent or surrounding areas.

- Structures shall have an overall height of not greater than 30 feet.

In interpreting the Development Guidelines Table for site planning and site design review, the next highest category of standards should apply for each category of vulnerability found in the designated Flood Hazard Zone.

Planned Unit Development Standards

The planned unit development is intended to encourage ingenuity and innovation in site planning and design. By utilizing this approach it is possible to fit development to the natural terrain and landscape, which is frequently not possible under the lot-by-lot development approach. This is especially important in the Chattahoochee Corridor when a high premium is placed on both the preservation of water quality and the retention of a unique and scenic environment. An additional advantage of PUD developments is that the park and recreation facilities provided for residents supplement similar public park and recreation facilities. The planned unit development approach is one of the most important tools for assuring wise utilization of land within the Corridor. To help insure the success of such an approach, the following are recommended.

Adopt the following general principle:

- To help insure the preservation of water quality and retain the unique and scenic nature of the Corridor, developments should be fitted to the natural features of the land. Structures should be clustered or concentrated in those areas of the site most suitable for development, with areas less suitable being utilized for low density activity or left as natural open space.

Adopt the following standards:

- Existing public utilities and facilities shall be of adequate capacity to meet the requirements of the proposed development, or firm plans to bring them up to the required capacity shall have been approved by local governments prior to granting approval of the development.

- The minimum size for a planned unit development shall be 50 acres for a mixed-residential development and 100 acres for a mixed-use development.

- All proposed development plans shall be required to follow the land vulnerability analysis developed by the Atlanta Regional Commission, using clearance and impervious surface guidelines for site planning and site design review.

- A minimum of 30 percent of the total gross acreage shall be set aside as common open space, or for parks and recreation areas.

- Multi-family residential structures shall not occupy more than 15 percent of the total gross acreage.

- Commercial uses shall not occupy more than five percent of the total gross acreage.

- The maximum density shall not exceed six dwelling units per gross acre for any planned unit development.

- Development of an approved PUD may be staged; however, later phases shall not be developed to exceed the total number of dwelling units originally approved for the entire planned unit development.

Voluntary Protection Zone

In developing the Corridor plan areas have been identified for public purchase, and principles and standards for regulating development in the Corridor have been recommended. It should be recognized that acquisition and regulation can only go so far. There are many areas of high scenic quality or of historical or educational significance which should be preserved but for which the public resources to do so are not available. These areas have been identified as protection zones. What is needed now is a cooperative effort on the part of local landowners, developers, concerned citizens and local governments to see that these areas are protected and preserved. There are a number of ways that such an effort can be achieved.

The greater part of the Voluntary Protection Zones is comprised of land least suitable for and most vulnerable to development. In many projects, especially large-scale developments such as PUD's, the developer has enough flexibility in site design to insure that the most scenic, historic or educationally significant areas are retained as open space. A local example of such a voluntary preservation effort was the retention of a historic Civil War site as an open space area in a recent Fulton County development.

For private landowners whose holdings include portions of the Voluntary Protection Zone, careful site design could achieve the same objective. The Atlanta Regional Commission is prepared to provide assistance and advice to those landowners who control some of the most scenic areas of the Corridor and who desire to see their land preserved for the enjoyment and benefit of future generations.

Many citizens and civic groups have long demonstrated interest in private efforts to preserve unique areas within the Corridor. The designation of Voluntary Protection Zones offers these individuals and groups the opportunity to direct their efforts at preserving those special areas that will not be covered under the proposed public acquisition program.

To achieve a successful voluntary preservation program, the following guidelines are recommended to those owning property within the Voluntary Protection Zone:

- Limit the clearance of vegetation to five percent.

- Preserve all mature trees and flowering vegetation.

- Fit the proposed development to existing vegetation and slopes. Structures should be unobtrusive from the River, its banks, and other public areas.

Local governments will be given an inventory of historic sites within the Corridor which can be used as an aid in developing proposals for areas in which these sites are located.

Development Guidelines

These development standards have been designed to serve as guides for site planning and design review in accordance with the land vulnerability analysis prepared by the Atlanta Regional Commission. The standards are based on water quality protection criteria. To provide incentives for additional water quality protection measures, percentages of clearance and impervious surface may be adjusted upward by one category when additional protective measures are taken. Examples of such measures include: (1) limiting construction to areas over 500 feet from the River, (2) providing for permanent runoff control such as drainage lakes, and (3) landscaping with trees and cover equal to or greater than the original natural vegetation.

Category of Vulnerability	% Maximum Clearance*	% Maximum Effective Impervious Surface**	Maximum Cleared Unit (acres)	Distance Between Cleared Areas For Each Acre Cleared (feet)
A	90	75	unlimited	unlimited
B	80	60	5	10
C	70	45	4	25
D	50	30	3	50
E	30	15	2	100
F	10	2	1	250

* Land already cleared is included in this percentage.

** Impervious surface is determined by runoff coefficents which have been established in civil engineering practices for all types of ground cover. For example, concrete has a runoff coefficient of 1.0. Therefore, the effective impervious surface is the sum or composite of all runoff coefficients multiplied by the amount of land in each kind of ground cover, divided by the total area under development.

ACQUISITION

Full realization of the plan will depend not only on the regulation of private development and proper installation of public utilities but also the expenditure of substantial sums of money for purchase of land and development of parks.

At this time the exact role of local governments, State agencies, and the Federal Government is not clear. However, guidelines for responsibilities can be suggested. A major portion of the proposed recreation element is of regional significance and beyond the capacity of local governments, so the Atlanta region must turn to the State of Georgia. Major urban highways in the metropolitan area are developed by the State; it is equally logical that the State assume a similar role for major urban parks.

Responsibilities

The proposed function of each park provides a logical breakdown of responsibility. The State is presently gearing up to place game and fish rangers on the River; therefore all islands are appropriate for State jurisdiction. In addition, the State should assume responsibility for major historic sites, natural areas, and the large overnight recreation facility in the upper stretches of the study area.

Several sites are proposed primarily for access to the River or a community park located by the River. The adjoining cities and counties logically would be responsible for these types of areas.

Funding

The total park system proposed encompasses approximately 6,000 acres. Of this, 1,500 acres (about 25 percent) are either already publicly owned, under purchase option, or conceivably could be donated to the public. A major portion of the recreation-open space plan is within the realm of realization. The remaining 4,500 acres can be acquired for approximately $21 million if acquisition takes place within a reasonable length of time. This is not an unreasonable figure. The Atlanta Stadium involved a similar investment.

The Land and Water Acquisition and Development Fund administered by the Federal Bureau of Outdoor Recreation or other Federal programs and agencies could supply up to one-half of all acquisition funds. Commitment of this level of financial support would clearly demonstrate the Federal Government's interest in urban-oriented open space.

In the coming months and years, aggressive use of all available methods for acquisition will be necessary if this element of the Corridor plan is to be realized. Just as public-private cooperation is needed in private development, donations of both land and money by public spirited individuals and organizations will be necessary to accomplish these goals. Private foundations could help by supplying needed funds and holding land until public bodies could act. Without Federal and private contributions the State's share of additional acquisitions will be approximately $12.3 million. The total local share will be about $8.7 million. Responsibility for maintenance and policing should be divided among State and local agencies in the same manner as acquisition.

Development costs have not been estimated as part of this study. Due to rising land costs and increasing development pressures, land acquisition should receive first priority. Exact development costs and operating expenses should be developed closer to the actual time of development.

The important step is to set the land aside now.

The money may not be available to purchase every specific site before private development takes place. Highest acquisition priority should be placed on the sites that are unique and for which alternates are not available.

If any site cannot be purchased in time to set it aside for public use, then the private development that takes place should follow the land vulnerability analysis and take any outstanding scenic or historic features into account in the design stage.

Epilogue

Three major issues must be addressed in the future: (1) the development of a natural features framework for regional planning; (2) closer control of the quality and quantity of water flowing from Lake Lanier; and (3) the imaginative use of existing and new techniques for preservation of open space.

An important measure of the quality of life in the Atlanta region is the quality of water in the free flowing streams and rivers. The quality of water is only as good as the development along the stream banks and the urbanized drainage basins allows it to be. Past studies have laid the groundwork for making development in the Atlanta region respond to the natural framework and parameters of this area.

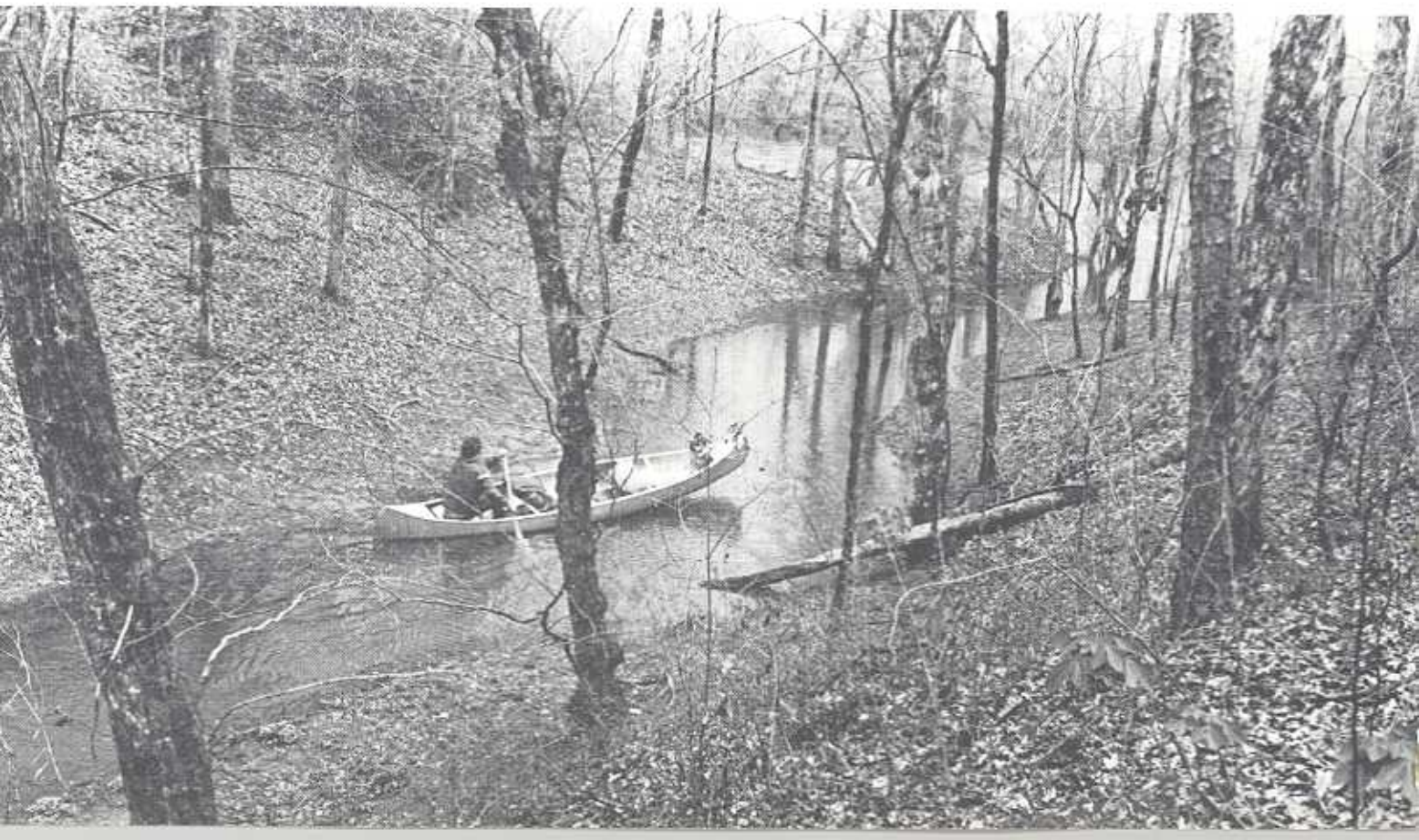
The Atlanta Regional Commission is currently involved in an evaluation of past metropolitan plans and development of new, updated proposals. An important consideration in this effort will be the natural setting. Key features will be inventoried and analyzed from the standpoint of regional development.

The quality of water in the Chattahoochee Study Corridor depends to a large extent on how the drainage basins within the metropolitan area are developed. However, the purity of water flowing from Buford Dam and Lake Lanier will be a major determinant in preserving this resource. Methods of smoothing the surges of water caused by production of peaking power must be developed. It must be addressed, whether this takes the form of re-regulating dams or a redefinition of the purposes of Buford Dam. Atlanta will need a steady flow of water unpolluted by silt from eroding river banks. Development of the upper stretches of the Chattahoochee in the Georgia mountains and around Lake Lanier is beginning to accelerate and if not properly regulated it can degrade the water flowing into metropolitan Atlanta.

Land in open space can either be owned by the public or held by individuals or organizations. Farms constitute a major form of open space in the Chattahoochee Corridor; however, rising land values and resulting increases in taxes are exerting strong pressures for conversion of rural land into urban uses. Many individuals attending various briefings throughout the course of this study indicated a desire to continue farming but expressed frustration with the difficulty of dealing with rising urban development and related taxes. An alternative to public purchase of some areas of open space might be adjustment of taxes or some other form of compensation for landowners willing to hold land in a rural state.

This short summary points out that additional work is needed. Effective cooperation of all levels of public agencies and all types of private enterprises is needed to successfully implement the recommendations of this study. A careful, studied approach to other aspects of the Chattahoochee River is necessary if the future is to be something more than a repeat of the past.

What does the Chattahoochee River mean to Metropolitan Atlanta? One answer it that it is an opportunity and a model for wise use of all the region's resources.



Summary Of Recommendations

LAND USE PLAN

Public Element

Bridge crossings, water and sewer service should be provided in accordance with regional transportation, water and sewer plans. At present, public sewer service is not proposed any farther upriver than the Ball Mill Creek Basin (approximately two miles above Roswell Road) in DeKalb and Fulton Counties.

The plan recommends public purchase of approximately 6,000 acres of parkland and open space. Among the areas where public acquisition is recommended are: the Palisades area on both sides of the River; Sope Creek Gorge; the Morgan Falls Dam area; Big Creek Gorge; the Island Ford area; Jones Bridge area; and Suwanee Creek.

Private Element

Single-family, multi-family and limited commercial activity is proposed in the areas between U.S. 41 and Interstate 285, and Roswell Road and Georgia 400.

Single-family subdivisions and mixed-residential planned unit developments are appropriate in all other areas within the recommended limits of public sewerage.

Farming and other rural activity, including large-lot singe-family housing should be continued in the upper stretches of the Corridor.

The planned unit development (PUD) is the single most important tool to realize wise private development within the Corridor. Unlike traditional single-family subdivisions, this concept allows development to be fitted to the site, clustering where the terrain is most suitable for development and leaving less suitable areas as open space.

IMPLEMENTATION PLAN

Countywide Recommendations

Erosion and sediment controls should be adopted to prevent silt and other polluting runoff from entering the Chattahoochee and its tributaries. No development should be allowed that would increase the need for flood protection.

River Corridor Recommendations

Development should be fitted to the natural features of the site in accordance with the Atlanta Regional Commission's vulnerability analysis.

A 50-foot natural buffer zone should be established on either side of the River, with an additional 100 feet that may be selectively cleared but which cannot contain structures or impervious surfaces.

Special regulations should be adopted for lands not presently in official 50-year flood plains but which are potentially subject to flooding as more development occurs and runoff increases.

Developments making use of the planned unit development technique should be constructed in balanced stages and provide for privately owned common property and open space.

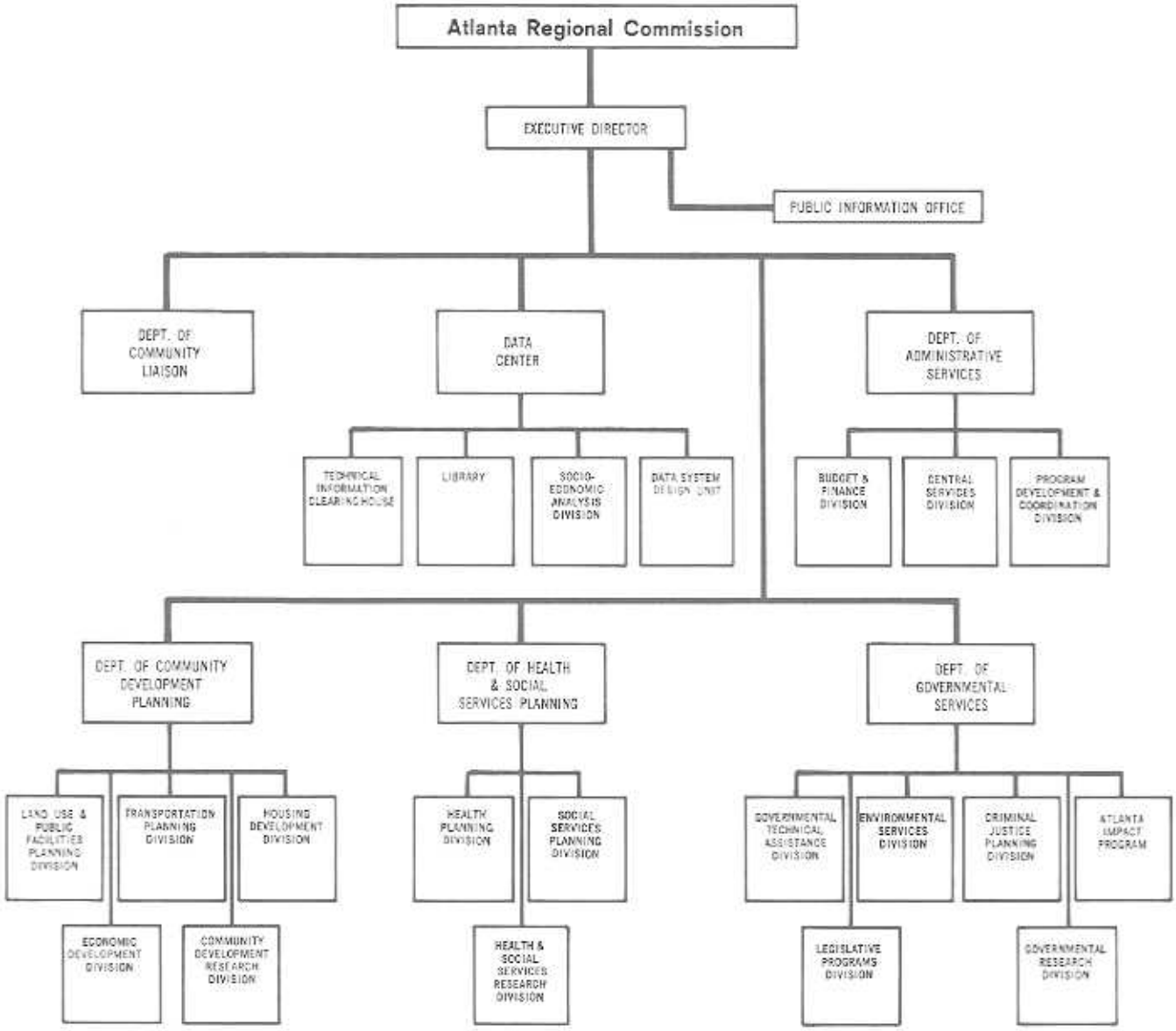
Unique areas that will not be purchased should be subject to special considerations in both site design and private preservation efforts.

Development guidelines recommended by the Atlanta Regional Commission should be used in site planning and site review within the Corridor.

Public Acquisition Program

Criteria are suggested for private, Federal, State and local participation in the purchase of the designated public areas. Estimated total acquisition cost is $21 million.

Appendix



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THE ATLANTA REGIONAL COMMISSION

The Atlanta Regional Commission is an area planning and development commission, operating under Georgia Law No. 1066 (1970) and Georgia Law No. 5 (1971). It was created in 1971 by the Legislature and assumed all powers, duties, and obligations of the Atlanta Region Metropolitan Planning Commission, Metropolitan Atlanta Council of Local Governments, Metropolitan Atlanta Council for Health and Atlanta Area Transportation Study.

Georgia Law No. 5 placed all comprehensive planning and development functions under the ARC umbrella, established Area Plan review powers, and designated ARC the A-95 clearinghouse for the five-county region. Under the area plan review responsibility, this Commission must review any plan proposed by a governmental agency or franchised utility, which affects more than one governmental jurisdiction. The Atlanta Regional Commission is unique among the 18 area planning and development commissions in Georgia because of the way its operation is financed.

The membership is composed of twenty-three top locally elected city and county officials and citizen members. The twelve elected officials include: each of the five County Commission Chairmen; the Mayor of Atlanta; a member of the Board of Aldermen of the City of Atlanta; and one Mayor representing all of the Mayors in each county, selected by his peers. Eleven citizen members are appointed by all of the elected members, and represent districts drawn by the State Legislature, which cross city and county boundaries; one member represents citizens from at least two political jurisdictions.

Actions of the Commission

"Mr. Sweat and the staff have been involved in meetings with local planners and others to discuss ARC's role in the development of the Chattahoochee River Corridor. Upon motion duly made and seconded, the Commission unanimously endorsed the principle of strong ARC participation in future planning for the Chattahoochee River Corridor and directed the staff to pursue potential State and Federal funding sources and begin preparation of a detailed study and plan for the Corridor."

From minutes of the Atlanta Regional Commission. November 24, 1971

"Commissioner Farris called the group's attention to the Chattahoochee River matter again. He moved that ARC authorize the Executive Director to ask all the governments in the Chattahoochee Corridor to hold all zoning applications in abeyance until ARC's study is complete or until action is taken by the Legislature. The motion was seconded by Mayor Massell and unanimously approved by the Commission."

From minutes of the Atlanta Regional Commission. January 26, 1972

A RESOLUTION BY THE ATLANTA REGIONAL COMMISSION CONCERNING PROPOSED DEVELOPMENT IN THE CHATTAHOOCHEE RIVER CORRIDOR

BE IT RESOLVED by the Atlanta Regional Commission that effective July 1, 1972, any plan or proposal that involves governmental action, expenditure of public funds, use of public property, or the exercise of franchise rights granted by any public body and which potentially affects the area within the Chattahoochee Corridor (said Chattahoochee Corridor is hereby defined as "all land within 2,000 feet of the natural river banks of the Chattahoochee River from directly below Buford Dam downstream to the point at which the river flows under the Seaboard Coastline Railway Bridge below Peachtree Creek, including the entire bed of the stream and all islands contained therein") is hereby determined and declared to be an "area plan" under the provisions of Section 1, (b), Section 15, Section 16 and Section 19 (b) of Georgia Laws 1971, Act No. 5.

Adopted: February 23, 1972

RESOLUTION BY THE ATLANTA REGIONAL COMMISSION GIVING GUIDANCE TO ITS STAFF IN THE CONDUCT OF THE CHATTAHOOCHEE CORRIDOR STUDY

WHEREAS, the Atlanta Regional Commission included a study of the Chattahoochee River Corridor in its 1972 Work Program which was begun on January 1, 1972; and

WHEREAS, the Atlanta Regional Commission authorized the Executive Director to ask all local governments in the Chattahoochee Corridor to hold all zoning applications in abeyance until the Atlanta Regional Commission's study is completed; and

WHEREAS, the Atlanta Regional Commission decided to activate its power to review "Area Plans" within the Chattahoochee Corridor effective July 1, 1972; and

WHEREAS, it is appropriate at this time to give guidance to the Commission's staff in detailing the Corridor Plan;

NOW THEREFORE BE IT RESOLVED by the Atlanta Regional Commission that its staff is directed to use the following assumptions and goals in the progress of the Chattahoochee Corridor Study:

ASSUMPTIONS:

The Chattahoochee River and lands within its Corridor will be used for a variety of activities from conservation to urban development. It is an urban river.

Public and private sectors will both play an important role in the ownership and development of the Corridor.

The major responsibility for guiding development in the Corridor will rest with local governmental units.

The plan will be developed with phasing and priorities. Past regional studies, plans and policies will be used as a starting point.

GOALS:

The plan should provide for:

Preservation of water quality as the fundamental objective.

Protection of scenic, historic and other unique areas.

Protection of private property rights of landowners.

Controlled public access and recreational uses.

Location and design of land uses in such a way as to minimize adverse impact of urban development on the River and adjacent lands.

Adopted: April 26, 1972

A RESOLUTION BY THE ATLANTA REGIONAL COMMISSION ADOPTING THE CHATTAHOOCHEE CORRIDOR PLAN AND IMPLEMENTATION FEATURES OF THE PLAN

WHEREAS, the Atlanta Regional Commission has conducted a special study of the Chattahoochee Corridor lying between Peachtree Creek and Buford Dam, and

WHEREAS, the findings and recommendations of this study are based on the assumptions and goals previously adopted by the Atlanta Regional Commission,

NOW THEREFORE BE IT RESOLVED by the Atlanta Regional Commission that the Chattahoochee Corridor Study plan proposals and implementation features of this plan are adopted as official policy of the Atlanta Regional Commission, and

BE IT FURTHER RESOLVED that all affected governmental units, both local, state, and federal, are urged to adopt this plan and use it as their guide in all actions affecting the Chattahoochee Corridor.

Adopted: July 6, 1972

A RESOLUTION BY THE ATLANTA REGIONAL COMMISSION ACKNOWLEDGING THE CONTRIBUTIONS OF THE NORTH GEORGIA MOUNTAINS AUTHORITY IN ACCOMPLISHING THE CHATTAHOOCHEE CORRIDOR STUDY

WHEREAS, the North Georgia Mountains Authority has provided financial assistance to the Atlanta Regional Commission to fund the local share of the Chattahoochee Corridor Study, and

WHEREAS, the Authority has also provided important aid in the form of contributed time of staff members of the Authority to participate in the study,

NOW THEREFORE BE IT RESOLVED that the Atlanta Regional Commission formally acknowledges the valuable assistance of the North Georgia Mountains Authority and expresses its gratitude for this aid.

Adopted: July 6, 1972

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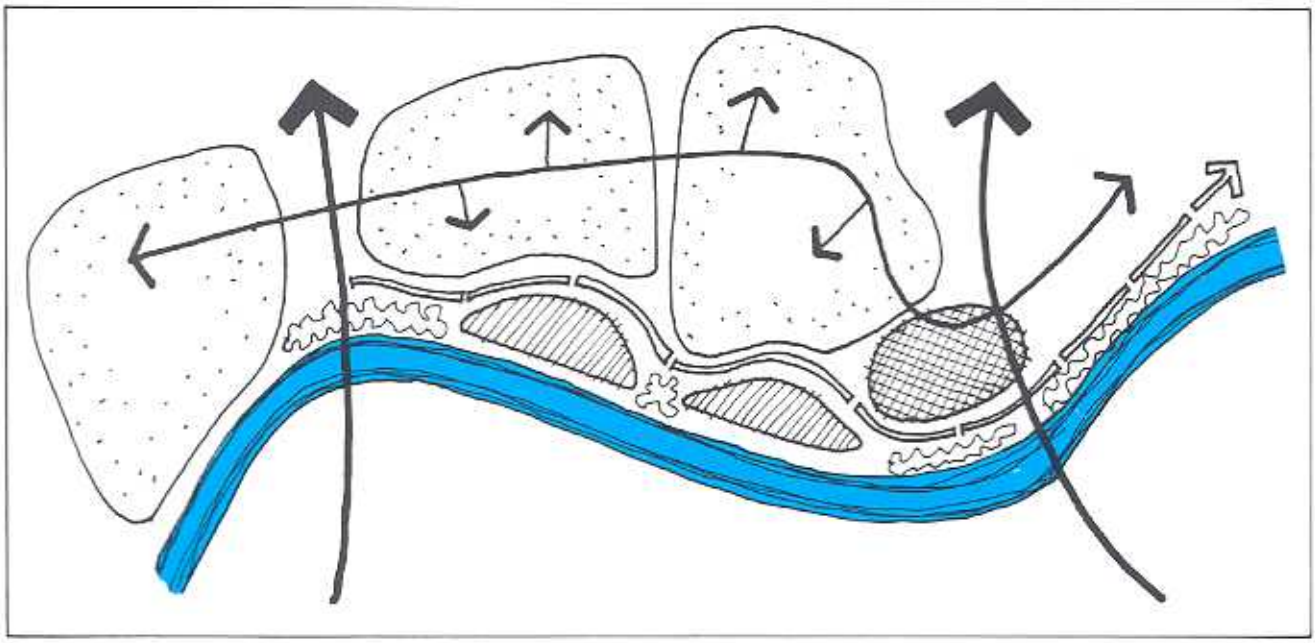
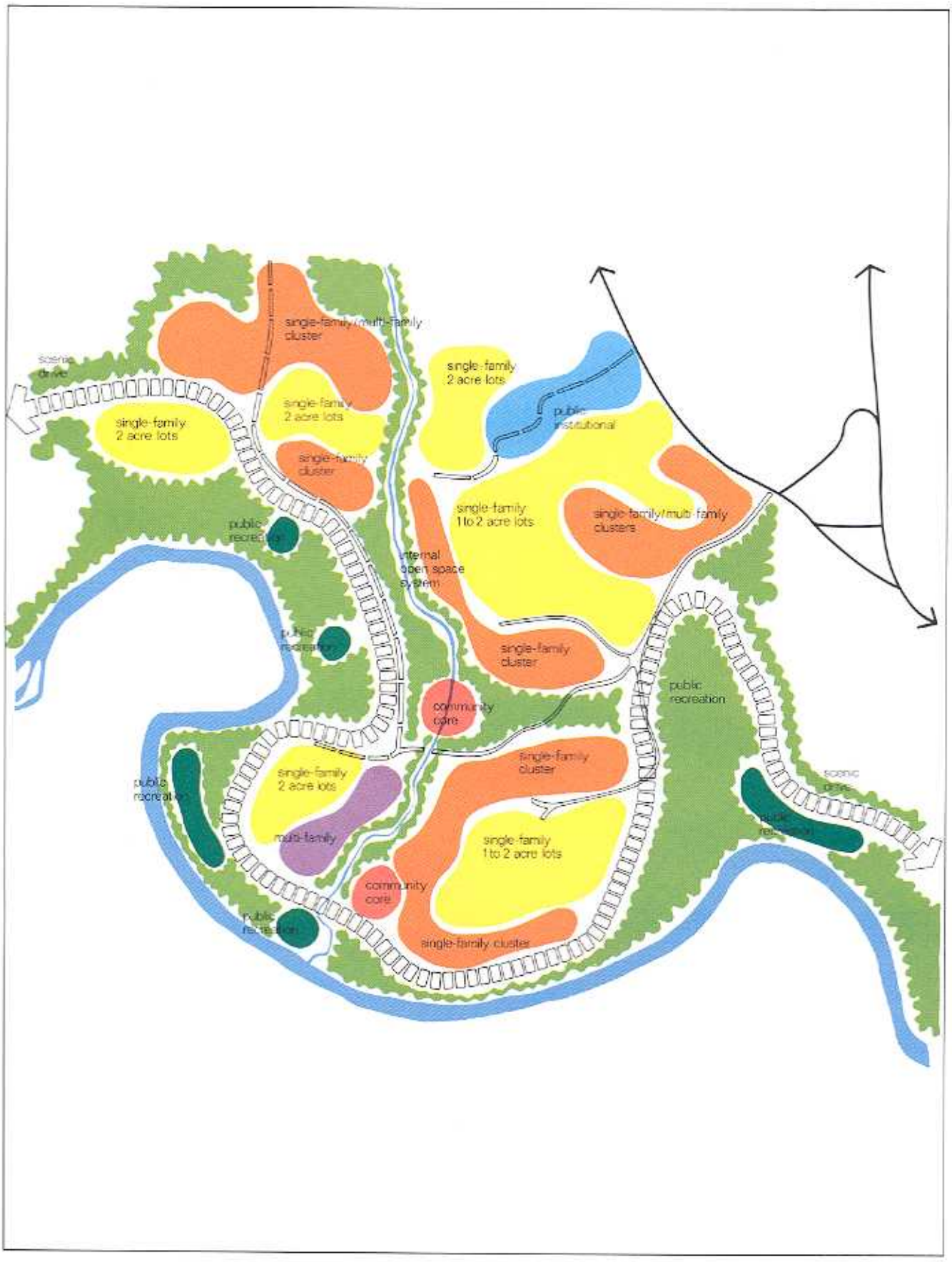
DESIGNING WITHIN THE PLAN

Preservation of water quality is an obvious benefit of developing the Chattahoochee Corridor in accordance with the guidelines and standards developed in this study. Another benefit is financial savings to the developer. Many factors that make a particular area vulnerable to development from a water quality standpoint can also make it more expensive to develop. Highly erodible soils must be stabilized if disturbed; areas subject to flooding generally have poor conditions for firm foundations; and steeper slopes can require extensive grading if high intensity development takes place.

The following pages show one way of developing a site in the River Corridor by responding to the land analysis and plan. The site chosen used the land analysis information shown on page 35 of this report. The layout is not detailed but a conceptual proposal for a planned unit development that contains open space, school sites, public recreation, a community center and single-family and multi-family residential areas. It is emphasized that this is only one design of the many that could be proposed for this site which would be consistent with the goals of the Corridor Study.

This particular site plan is shown only to indicate how development could be planned. Although the actual development that takes place in this area in the future should follow the Atlanta Regional Commission's land vulnerability analysis, conceivably it could look completely different from the ideas on the following pages. It should be emphasized, however, that any alternate plan must have the same goals.




single-family/multi-family cluster
single-family 2 acre lots
single-family 2 acre lots
single-family cluster
single-family 2 acre lots
public institutional
single-family 1 to 2 acre lots
single-family/multi-family clusters
internal open space system
single-family cluster
public recreation
community core
single-family cluster
single-family 2 acre lots
multi-family
single-family 1 to 2 acre lots
community core
single-family cluster
public recreation